



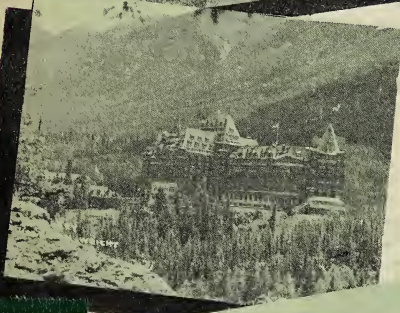
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WESTERN TREASURE CHEST



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ALBERTA -- WESTERN TREASURE CHEST

Ivor Boon, B. A.

and

Marjorie Boon, B. A.

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Authorized by the Department of Education
as a primary reference for Grade 5, Sec-
tion B, "How Alberta Provides for Her
People," and as a supplementary reference
in Grade 6, Section B, "How Men Live and
Work in Canada Today."

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Dear Girls and Boys,

You have all read stories of buried treasure chests. How thrilled you became as you, in your imagination, joined in the search for treasure left by bold pirates who sailed the Spanish Main.

This book will tell you of another treasure chest. This chest is larger and more valuable than any other about which you have read. It is our own Alberta. The treasures of our province are so great that we have no idea of their real worth. Each year we discover new treasures in our "Western Treasure Chest".

Many of our treasures lie deep down in the earth, and we, like other treasure hunters, must dig them out. Our coal, our gas, our oil, our salt, our clay, and our tar sands are just a few of the gifts nature has left us. We have scarcely started to bring out the great wealth stored below the surface of the earth. Every day the search goes on and every day new wealth is discovered.

Our agricultural wealth is one of our greatest treasures. Alberta farmers have supplied many of the agricultural materials needed to equip the Allied Forces during two world wars. Starving people of Europe are fed from the wealth of our grain fields, our pastures, and our gardens. Huge irrigation and clearing projects are now being carried out. This will add millions of fertile acres of land to the agricultural districts of the province. New branches of farming are being developed each year. Cattle raising and wheat growing are still very important, but they are only two of the many industries that we can carry on because nature has blessed us with a fertile soil. Agriculture supplies the many raw materials we need in our growing manufacturing industries.

Tucked away in our Western Treasure Chest we find many little extras put there for our enjoyment. Our beautiful mountains and glorious park lands provide us with the best scenery in the world. How fortunate we are to be able to relax in, and enjoy, this wonderful gift that is ours. Year by year more beauty spots are discovered and more visitors are sharing with us our famous scenery and glorious Alberta sunshine.

The citizens of Alberta realize that one of their greatest gifts is that of healthy bodies. In the last chapter of this book you will see some of the ways in which the Department of Health is helping us to keep healthy and well. Miss Ethel C. Shaw, B.Sc., R.N., who has given valuable assistance in preparing this story of Alberta, is but one of the people engaged in protecting the health of the boys and girls of our schools.

Still there is another gift within our treasure chest. It is what we call "culture", and includes those things which make us a happy and a contented people. Brave missionaries have taught the people of our province about God, the Giver of all our gifts. Here we may worship Him as we wish with no one to hinder or molest us. This is a privilege for which we should be sincerely thankful.

Our school system is one of the most modern and complete in the world. The number of "special" studies is increasing year by year. There is an opportunity provided for the citizens of Alberta to study the particular things in which they find the greatest enjoyment. The Banff School of Fine Arts is only one of the places where special studies in the "cultural subjects" is carried on.

The future of our province is truly great. It is your task, girls and boys, to develop and use the great gifts God has placed in our Western Treasure Chest.

Sincerely,

Ivor Boon,

Marjorie Boon.



OUR PROVINCIAL LEGISLATURE

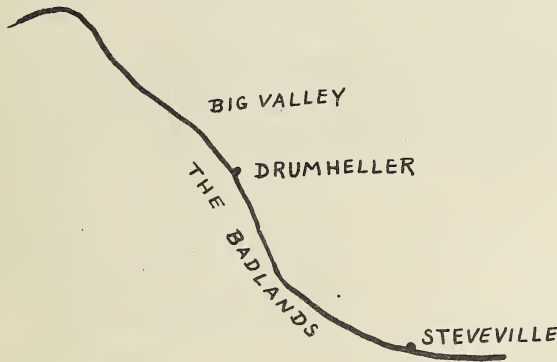
CHAPTER I: THE LONG LONG AGO

Scientists are Putting a Puzzle Together

Have you ever tried to put a jig-saw puzzle together? Of course you have. What a time you had to get each piece to fit. Perhaps some pieces were missing, or worse than that, perhaps several puzzles were mixed.

Do you know that scientists have for many years been trying to put the world's greatest jig-saw puzzle together? Where have they been doing this? They have been doing it right here in Alberta.

As the traveller nears the City of Drumheller he comes to a deep gorge about a mile wide, cut right into our prairie. The land has taken on strange forms. Wind and rain and streams have worn away the softer parts of the rock and soil, leaving curious knolls and flat-topped hummocks. So strange are these lands that the early missionaries called them the "Bad Lands". From Big Valley south-east to Steeveville stretches this weird sight. Small bushes grow here and there, cattle and sheep graze in some of the valleys, rocks and minerals of many colors crop out on the hillsides. The river valley with ravines and coulees flowing into it is a sight to behold.

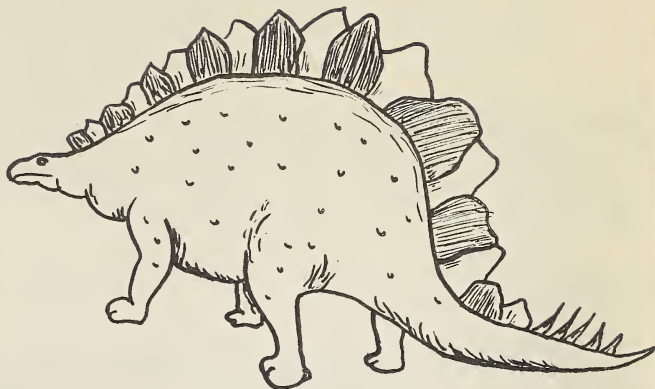


The land itself is a strange scene, but the things we find in this valley gives one greater cause for wonderment. The petrified trunks of great Redwood trees lead us to believe that a great forest once existed here. Remains of fish, lizards and crocodiles, oysters and clams make us think that this area must have at one time been covered with water. Still greater is our surprise when we find the bones of great animals scattered throughout the Bad Lands.

Some scientists tell us that a great ocean once stretched from the Arctic Ocean to the Gulf of Mexico, right across Alberta. The water gradually disappeared, leaving swampy lands on which later grew dense jungles. Other scientists say that a great sea covered a large part of our land, back from the sea was swampy ground, and still farther back grew great tropical forests. In the swamps and forests lived the prehistoric animals. The climate in those far off days must have been very warm.

Dinosaur Hunting

The dinosaur hunter first finds his clue in the form of a piece of bone exposed to view. It may be only an inch or two in length or it may be a few feet. Once he has found it, he begins to clear away the loose soil and often comes across more bones hidden deeper in the earth. Sometimes the bones are all in a heap, sometimes they are in the form of a skeleton, but sometimes only a few bones are found in one place. If the hunter is lucky he is able to put his jig-saw puzzle of bones together to form the skeleton of a prehistoric animal.



ARMOURED DINOSAUR

Bones of some of these creatures are preserved at St. George's Island in Calgary where you may see life-sized models of these animals - the first inhabitants of Alberta. "Dinny", the dinosaur is always on hand to welcome you to Calgary.

Dinosaur bones have been found in other parts of Alberta, including the Peace River Area, High River, The Cypress Hills, Cardston, Edmonton, and the Porcupine Hills.

The Duck-billed Dinosaur loved the water. His body was covered with a thin skin and scales, his front legs were about six feet long with webbed feet something like a duck's feet. His hind legs were longer and also had webbed feet with which to push himself along in the water and to keep him from disappearing in the mud. He used his tail as a propeller. The table manners of this dinosaur were not good. He lived on plants which he pushed into his mouth with his front legs. He chopped them off with his long hard bill and ground them up with his two thousand teeth. He had no dental troubles, for new teeth grew to take the place of the ones that became worn out.



FLESH-EATING DINOSAUR

Life, however, was not all a bed of roses for the Duck-billed dinosaur. Whenever he went for a stroll on the land he was likely to meet his enemy, the Flesh-eating dinosaur. This "gentleman" strutted along on a pair of hind legs some ten feet long fitted with claws about a foot long. When he saw the Duck-billed dinosaur, he made a dash

towards him, and caught him before he could get back to the water for safety. With his claws and sharp teeth he soon tore the flesh off his enemy, and sat down to dinner.

Some of the plant-eating dinosaurs were well protected from their flesh-eating relatives. One variety, the armored dinosaur, had a row of bones over its back, so that its enemies could not sink their teeth into it, and the huge bony tail could deal a terrific blow to anyone who came near. Another variety, while not famous for its beauty, protected itself with a three foot horn just above its nose. The back of its neck was protected with sharp spiked bones. We wonder why nature even bothered protecting the heads of these animals, their brains were very small and of little value to them.

All that we have now by which to remember these monsters of long ago is their bones along our river valleys. They themselves have disappeared from the face of the earth.

The First Human Inhabitants

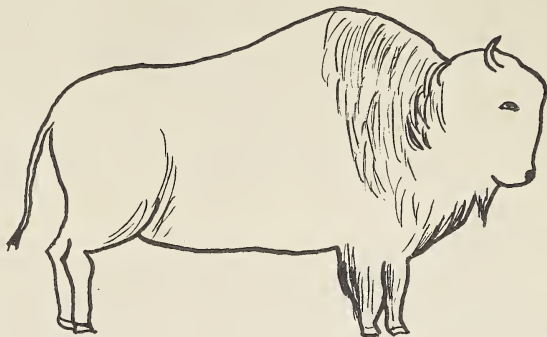
We believe that for many years the Indians were the only people living on our Western Plains. We are not sure how they got to our country, but we think that they probably crossed the Bering Sea. The western tip of Siberia and the eastern tip of Alaska are quite close together. The Indians may have crossed this narrow sea in their small boats, and gradually worked their way southward. Since their appearance is somewhat like that of the people of Asia, we think that this is likely. It is unfortunate that they did not leave any written records of themselves. What an interesting tale it would have been!



When the white man first visited our western Indians he found them living in tribes, wandering from place to place in search of food. When the herds of buffalo moved, the Indians moved. The buffalo, to the Indians, was a sort of "walking department store". It was their source of food, clothing, and shelter. Those of the more northern sections followed the caribou.

The unsettled habits of the Indians meant that they could never build proper

homes. They were continually on the move. They developed many devices to assist them in their transportation -- the travois, the toboggan, the snowshoe, and the birch bark canoe. Strange to say, they never hit upon the use of the white man's most useful article in transportation -- the wheel.



"INDIAN DEPARTMENT STORE"

The First White Men Were Fur Traders

Exploration in the West was carried on largely by the men of the two great fur trading companies -- the Hudson's Bay Company and the North West Company. Each was trying to get the Indian trade in furs, and in doing this, they travelled farther and farther west, exploring as they came. We do not know the names of the first white men to reach Alberta, but to the following should go some of the credit.

La Verendrye and his Sons saw the Rockies.

La Verendrye was in charge of a trading post on Lake Nipigon, just north of Lake Superior. The Indians who came to the post told him of a river flowing westward into a great lake whose water was bitter. He thought it was the Great Western Sea and set out in search of it. After years of travel and hardship he was forced to turn back, but two of his sons continued on westward. They tell of seeing large mountains while travelling with the Bow Indians. Unfortunately the Bow Indians would not lead them across these mountains because they were afraid of their enemies, the Snake Indians. Thus, after travelling over two thousand miles, they were forced to turn back.

People believed for many years that these explorers had mistaken the Black Hills of Dakota for the Rocky Mountains. In 1935 a lead plate was found at Cowley in Southern Alberta. This plate gave Les Verendryes the credit they deserve. The plate was exactly like those carried by La Verendrye and had the year 1743 scratched on it. It is almost

certain that it was left here before they turned back.

Anthony Hendry spent a winter in Alberta.

Anthony Hendry was employed by the Hudson's Bay Company at York Factory on Hudson's Bay. He was chosen to make an expedition to the West to try to persuade the Indians to deliver their furs to his company. After travelling hundreds of miles he heard from the Indians that another tribe lived farther west - a tribe of horseback riders. This Hendry decided to see with his own eyes. He crossed the South Saskatchewan, the North Saskatchewan and the Red Deer River, and finally arrived near the present site of the City of Red Deer. He was met by Indians on horseback. They were friendly, so he spent the winter with them, joining in their hunts. He probably saw much of the country between Calgary and Edmonton. When he told the officials of the Hudson's Bay Company about Indians on horseback he was dismissed from their service as a liar. He was probably the first white man to live in Alberta.

Peter Pond and Alexander Mackenzie were fur-traders and explorers.

The "Pedlar" Peter Pond was the next white man to reach Alberta. He followed the Churchill River and portaged to the Clearwater River. At the present site of McMurray he built a post. But Peter was a villain and made trouble with the Indians.

A Scottish fur trader, Alexander Mackenzie was sent to take charge of Peter Pond's post and make friends with the Indians. He soon built another post farther north. He named this Fort Chipewyan. He was an adventurous soul and in a short time was off to the Land of the Midnight Sun. He reached the Arctic.

Mackenzie was still unsatisfied. His next venture was westward to the Pacific -- a trip no white man had ever taken. He packed his luggage (a ton of it), secured two Indian guides, and with six French Canadians to paddle his canoes, he set out up the Peace River. The first part of the trip was rather uneventful, but the latter part was a thriller. He spent the first winter near the present town of Peace River, and in the spring set out on the dangerous



trip up the Peace to its source. He pushed his canoe, he pulled his canoe, and he carried his canoe until he reached the "Divide". Then down the rivers he went, braving rapids, portaging, cutting a path through the bush and meeting hostile Indians, until on July 22, 1793, he arrived at the Pacific.

In the footsteps of the explorers, trading posts sprang up. Missionaries followed the traders, and settlers followed the missionaries. Fort Edmonton, Fort Briscois, (Calgary), Fort Macleod, Fort Whoop-up, Jasper House and Rocky Mountain House are only a few of the old forts in our province.

CHAPTER II: RELIGION AND EDUCATION

It is hard to believe that one hundred years ago religion and education had not reached our province. The early missionaries knew that it was useless to give Bibles to people that could not read, so their first job was to set up schools to teach them how to read. All over the world, and our own country was no exception, it has been necessary to educate the people to whom we wish to bring Christianity. Religion and education moved into the wildernesses of our own province hand in hand. To no religious body should go all the credit for bringing Christianity to the Indians -- they have all helped. One text book, the Bible, served the needs both of teachers and ministers. When settlers came into the province missionaries and teachers had to extend their work to include these newcomers. We should not make the mistake of thinking that all the religious teaching and educating had to be done to the Indians.

Let us look into a few of the early educational institutions of the province.

The Mission at Lac Ste. Anne

The first missionary to remain any length of time in this territory belonged to the Roman Catholic faith. He was Father Thibeault and he came to Fort Edmonton from the Red River in 1842. His mission was established about forty miles away from the fort at Lac Ste. Anne. He and his assistant could not speak the Indian language and the Indians could not speak French, so things did not progress very quickly for some time. Fortunately there were some half breeds who understood both French and Indian dialects. They were a great help in overcoming the language difficulty. These brave missionaries carried on their work in the intense heat of summer and in the blinding snow storms of winter. They never knew when they would meet death and the hardships they endured were terrible. On foot or on horseback they visited the Indians who lived in the vicinity of Lac Ste. Anne.

Father Lacombe

In 1852 Albert Lacombe came to Fort Edmonton, and for the next sixty-six years he travelled from one end of this province to the other, doing good for everyone that he met. It is no wonder that the Indians called him the "Man With the Good Heart".

He spent his first winter in Alberta inside the walls of Fort Edmonton learning the Cree language from the men at the trading post. Then began his great work. Father Lacombe feared nothing, least of all hard work. It was a common sight to see this busy little man driving his dog team, swimming rivers, killing and dressing his own buffalo, planting grain, building missions and chapels with his own hands, or nursing the sick.

In the year 1862 he established a school in Edmonton where Constantine Scollen taught the children of the employees of the Fort. Missions and Schools for the Indians were soon established in Lac Ste. Anne, St. Albert, Grouard, Fort Chipewyan and St. Paul de Metis. The Grey nuns arrived and took over the teaching duties in these schools.

Father Lacombe did not interest himself only in the Crees in the North. His work

extended to the warlike Blackfeet farther south. With Father Scollen, the man who had taught school in Edmonton, he started a mission at Cochrane, one at Kipp near Fort Macleod and one in Calgary along the banks of the Elbow River. It is interesting to note that the Mission District in Calgary is the old homestead of Father Lacombe and Father Doucet.

The Blackfeet soon realized that Father Lacombe was their friend. When they were stricken with scarlet fever they called upon him to come to their aid. In a blinding snowstorm he set out with his half-breed servant, Alexis. Soon he was passing from tent to tent speaking words of comfort and helping them with the medicine he had brought. The plague finally waned, but not before Father Lacombe himself had become ill with the disease. Thanks to Alexis he was restored to health once more. The Blackfeet saw that this praying priest could do far more for them than all their medicine men combined could do.

At two different times the love of the Blackfeet for Father Lacombe saved the lives of many white people. When the railway was coming across the prairies some of the Indians were not at all pleased. These huge snorting iron horses would drive the buffalo away. The flesh of the buffalo supplied the Indians with meat and from the skins were made clothing and coverings for the teepees. The railway builders called on Father Lacombe to persuade the Indian Chiefs to move off the land on which the railway was to be built. He told them that they would be given other lands to make up for those they lost. They believed him and packed up and left. The railway was continued through the Blackfoot reserve at Gleichen. Again in 1885 when Louis Riel was leading a rebellion in northern Saskatchewan, Father Lacombe persuaded the Indian chiefs of the Blackfoot tribe not to join in with the rebels. This was not an easy job, as the warriors loved a fight



--Alberta Government Photograph

THIS BRICK BUILDING ENCLOSES THE ORIGINAL CATHEDRAL AT ST. ALBERT

At St. Albert Father Lacombe decided he would teach the Indians and half-breeds to farm. He set one group to work cutting down the spruce trees, another group was to saw the trees into logs, a third group he put to work planting a garden, and the fourth group was to work in shifts with the one plow they had. When winter came he had about twenty huts built and a supply of food to last the winter. When he decided to build a bridge across the river the Indians and Metis were not very interested in the job. He told them if they did not help build the bridge they should not cross it. In three days the job was finished.

The farm at St. Albert needed a flour mill. Who would build one and start it operating? Father Lacombe, of course. Mills in those days were made from stones. The grain was spread on a large flat stone and moving around on this stone was another round stone like a roller. As the roller moved around in a circle the grain was ground into flour. For power the priest got ponies from the range. You can imagine how interested they were in the job of walking around in circles all day long. It must have been interesting to watch the little priest, "Breaking in his bronchos".

At St. Albert there was unveiled, not so many years ago, a monument to honor the man who did so much for the people of our province. A town has been named in his honor and just south of Calgary, at Midnapore, a home for old people and orphans stands in his memory. We shall always remember "The Man with the Good Heart".

Rev. James Evans

Reverend James Evans was a Methodist Missionary who made his headquarters inside Fort Edmonton. His first great accomplishment was to invent a set of signs to represent different sounds in the Cree dialect. His next task was to secure some sort of printing press with which he could make copies of parts of the Bible and distribute them amongst the Indians. With his pocket knife and an old file he fashioned symbols on blocks of wood. He melted the lead which he obtained from bullets and the lining of tea chests and poured it into clay moulds. Into the lead he placed his wooden symbols and when it hardened he had lead type. He could arrange the symbols in the order of words and sentences. His ink was a mixture of fish oil and soot from the chimney. For paper he used birch bark collected by his Indian friends. His press was that used by the Hudson's Bay Company for pressing furs into bundles for shipment. With this crude arrangement he managed to print Bible verses and hymns. He also taught the Indians to bind their pages with deer skin.

George and John McDougall

How would you like to cross the North Saskatchewan River in a skin boat attached to the tail of a horse that swam before you? Perhaps you would rather hold on to the tail of your own horse and let him pull you across the river. If you had been with the missionaries George and John McDougall you could have had your choice of these two methods of crossing the swiftly flowing North Saskatchewan River. This was only one of the many adventures of these two Methodist missionaries.

The Rev. George McDougall was in charge of all the Methodist missions west of Manitoba and on his trips he often took his son, John. John was only a boy when he first came west in 1862. He remained in Alberta until his death in 1917. The McDougalls made the Morley reserve, west of Calgary, their home. Their work carried them many miles

away from home and it was quite usual for them to be away from their families months at a time. One could not remain at home if he intended to act as doctor, minister and teacher to scattered bands of Indians. It was the McDougalls who prepared the Indians for the coming of the Mounties -- this was important as it meant a great deal to this small but famous band of men to be met by friendly rather than by hostile Indians. George McDougall perished in a blizzard near Morley, but his work was carried on by John and the other members of his family.

The Morley mission to the Stoney Indians and the Morley Indian School were established through the efforts of the McDougalls. In Edmonton, near Jasper Avenue stands the original Methodist Mission built by George McDougall. It is now a museum and if you have the opportunity it would be very interesting to visit this place, for here you would learn more about the life of the McDougalls. They should also receive the credit for establishing the Methodist Church in Calgary. Perhaps you wonder why there are no Methodist Churches now. Not so many years ago the Methodists and Presbyterians combined to form the United Church.

John McDougall died in 1917. Mrs. McDougall spent many years in Calgary after her husband's death. She was a grand old lady and thrilled her hearers with tales of the early days at Morley.

John McDougall's work was taken over by the Rev. G. W. Kirby. He came to Calgary in cowtown days and lived to see the city become the home of many fine churches and schools. He was Principal of Mount Royal College as well as an active United Church minister. A grand building, the Kirby Memorial Building, is now erected in his honor.

We have many things to remind us of these great men, but the greatest monument they have is a host of both Indian and white friends. Their names will long be remembered by those of all religions and races to whom they gave the very best they had - helping hand in time of trouble.

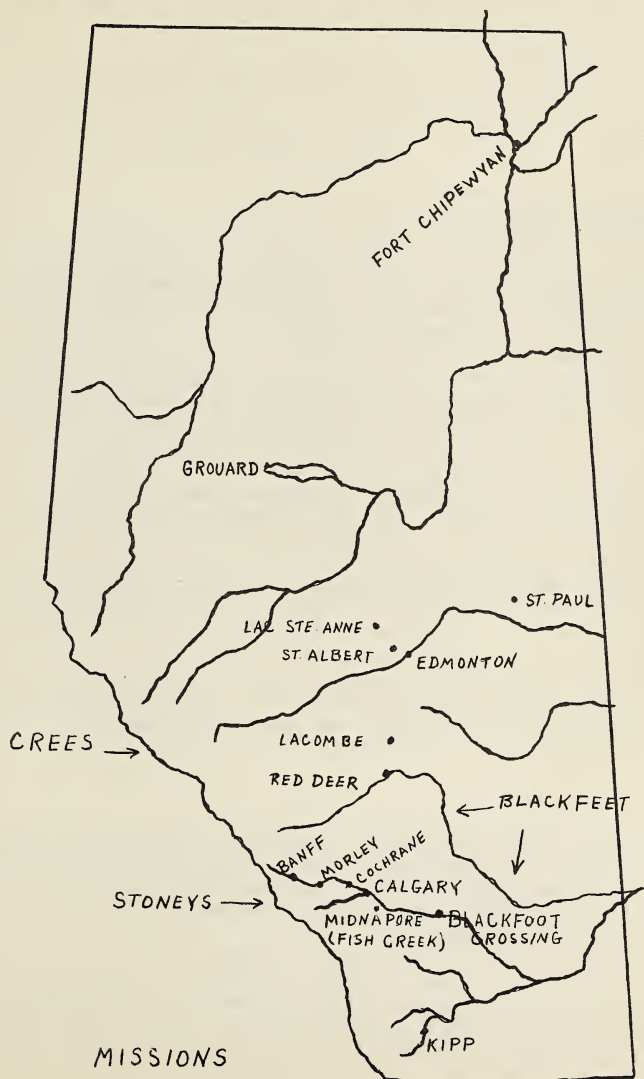
Archdeacon Tims

Of the many Anglican missionaries to carry on their work in our province we must always remember Archdeacon Tims. He was sent out to organize mission work amongst the Indians at Blackfeet Crossing. He did not know where his mission field was - neither did the Mission Board in England that sent him. He was told to inquire when he got to New York. He came west to Helena, Montana, by train and then 500 miles north to Blackfoot Crossing by stage coach and wagon. He arrived in 1883.

Tims found the Indians uncivilized and unfriendly to the whitemen. They blamed the newcomers for driving away the buffalo which had supplied most of their needs. No they could not go hunting when they needed food and they could see no chance of replacing their needs with whiteman's goods. They had never heard of God and were not likely to believe what a whiteman would tell them about Christianity. Someone had to show them what was meant by Christianity.

John William Tims made friends with two Chiefs, Crowfoot and Old Sun. These two men gave him permission to build a log shack, in the kitchen of which he held school for the children. He lived with the Indians and after 7 years he had mastered their language well enough to devise a system of writing it. He made a dictionary and wrote passages of the Bible in the Indian language.

Besides the school at Blackfoot Crossing we have Anglican churches, MISSIONS and schools scattered throughout our province. Tims was largely responsible for their organization. He was appointed Archdeacon and for many years lived in Calgary, where besides his duties connected with the Church, he was very active in the Southern Alberta Pioneers' and Old Timers' Association.



Missionaries and Pioneers.

The work of the missionaries did not stop when the Indian schools were established. As white settlers began to arrive the need for religious instruction became even greater. Groups of settlers often met together to form little churches and sent to eastern Canada or to Europe for a minister to travel about from place to place in their part of the west. These ministers were often students who wished to spend a few months in the field to learn something of the life they could expect when they graduated from school. Many of these liked the work so well that they returned to their studies more eager than ever to come back to the west and minister to the pioneers. It was not an easy life as you can well imagine!

The Anglican Church at Fish Creek.

Of the many interesting churches in Alberta none has a history exactly like that of the tiny Anglican Church of St. Pauls at Fish Creek (Midnapore). It is the oldest Anglican Church still in use in Alberta. If you drive south on the Macleod Trail you will see this little church beside the highway.

The land on which it was built in 1885 was the gift of a Roman Catholic. The roof was shingled by its first minister, who lived half way between Calgary and Midnapore so that he could serve both congregations. Midnapore and Calgary were about the same size in those days.

It is a pretty little building with its steep roof, spire and stained glass windows. Some of its furnishings were made by the Indians and the original hand made seats are still in use.

A splendid gift was received by this little church a few years ago. A bell that had hung in an ancient Church in England since the time of Henry VIII was presented to this tiny Canadian Mission. How we wish the bell could tell us some of the stories of Merrie England.

The bell, as it chimes over the quiet countryside, reminds us of the hardships of our pioneers, many of whom are buried in the little graveyard surrounding the church.

The Church Today.

Alberta is now the home of hundreds of churches operated by people of many religious beliefs. Some of these churches are great and beautiful buildings. Their chimes ring out in the clear Alberta air, calling our citizens to worship. How different they are from the missions of the pioneers! Times have changed, but people still realize that there is a God whom men should worship.

The days of the pioneer missions are not over. The travelling minister is still a common sight along our country roads. He holds services in scattered rural churches, in prairie schools, in community halls and in the homes of many of our citizens. Perhaps he has discarded his snowshoes and saddle pony for a car, but his tasks have changed little during the past fifty years.

The radio has played a very important part in sending church services to the remote sections of the province. Nearly all the churches of the centres near radio stations go on the air quite often.

The country to which missionaries came not very many years ago now has its own missionaries scattered all over the world. Several Bible Schools and Colleges operate within the province.

OUR PUBLIC SCHOOL SYSTEM

Our First Schools were operated by Missionaries.

We have heard how the first schools in our province were operated by the missionaries. As settlers came into the country and people began to form themselves into communities more schools were needed. Alberta was part of the North West Territories in 1885 when a few school districts were organized. Edmonton was the first of these districts in Alberta. The school in Edmonton was built on land donated by the Hudson's Bay Company and was paid for by the gifts of interested people. Schools at Calgary and Red Deer soon followed. In 1905 when Alberta became a Province there were 602 School Districts, but of course, they did not all have schools. The laws of the new province said that a school could be organized if there were at least eight children in the district between the ages of five and sixteen.

It was difficult to get teachers in the "early days". Many homesteaders and homesteaders' wives took over the job of teaching school as well as their farming duties. Special permits to teach were issued to people from the East and from the Old Lands.

The early schools were often built of logs or, if there happened to be a saw mill in the district, from rough-hewn boards. The building was done by the people of the district. Much of the equipment was made by hand. A large number of these early schools are still standing; some are still being used.

The Government of the North West Territories reserved one-eighteenth of all the land in the North West Territories for educational purposes. This land could be sold from time to time and the money given for education. The unsold portions could be leased for grazing, mining and lumbering but not for farming. This land became known as School Sections. Education has always been free in Alberta. All children between the ages of seven and fifteen must attend school.

The school inspectors of the early days led a hard life. They were the men who helped organize the school districts and helped the teachers in carrying out their duties. They travelled on horseback, in buggies, by dog team, or on foot. Their equipment they carried with them. At night they slept under the stars unless they happened to be near a lonely settler's shack where they could spend the night.

The citizens of these early communities took a kindly interest in their schools. School Boards consisted of three members elected by the people of the district. One of these men became Chairman of the Board and another often took the job of Secretary, unless they decided to hire a Secretary at a salary of about \$2.00 a month. Their meetings were held regularly, either in the school or in the home of one of the members. Once a year a general meeting of the citizens of the school district was held. At this meeting, besides electing a member to the School Board (A Trustee), each citizen was ex-

pected to take part in a discussion of the affairs of the district. Some of these school boards still exist.



A PRAIRIE SCHOOL

The public schools of Alberta provide free education to the people of our province. The Provincial Government makes grants of money and supplies to the schools, but these grants are by no means large enough to pay the cost of operation. Additional funds are obtained from taxes. Every person who owns property must pay taxes, part of which helps pay for the operation of our schools.

Alberta Had the First Large School Divisions in Canada.

Shortly before the outbreak of the Second Great War the Department of Education set up a number of large school divisions. The small districts often found it very difficult to pay for the upkeep of their schools. It was thought that grouping of schools over a larger district would save money and help the poorer districts. If one part of the district were short of money the other parts could help it out. Better services could be provided in the larger schools which resulted.

A large school division is made up of from about forty to one hundred rural and village schools. Five members are elected to form the School Board of the Large Division, a Secretary is hired, and a Superintendent is appointed by the Department of Education. An office is opened in some central spot and it is from here that the business of the district is carried on.

Some rural schools had a very low attendance and could often be closed. The pupils from these schools were taken to other schools by bus or car. Sometimes it was necessary to build large centralized schools, in other districts several rural schools were moved to one spot to form a large school with several rooms.

In the old one room schools one teacher taught all the subjects to all the grades. In these new schools there are several teachers, each teaching only a few grades. Better equipment can be supplied and special courses such as agriculture, manual training, household economics, music and dramatics can be given. The district pays for the buses or vans which pick up the children in the morning and deliver them to their homes in the afternoon.

Alberta was the first province in Canada to have large school divisions. There are now 56 large divisions in the province. Many divisions have built new and well equipped schools.

SPECIAL SCHOOLS

Agricultural Schools.

Agricultural schools are provided to train farm young people as farmers and home-makers. We have two schools at present - one at Olds and the other at Vermilion. These have been in operation since 1913 and about 9,000 young people have taken courses. Many people have attended courses on scholarships. Our Provincial Government has set aside money for a third agricultural school to be built in the near future. In connection with each school is a farm where the students are able to do actual farm work under the supervision of their teachers.

Technical Schools.

Technical schools are to train young people to become motor mechanics, electricians, dressmakers, commercial artists, etc. They are of two types:-

- (a) Technical High Schools - These are operated by the local school boards. They give a combined program of ordinary High School subjects and Technical courses. The Western Canada High School in Calgary and the New Composite High School in Red Deer are examples of this type of school.
- (b) The Provincial Institute of Technology and Art in Calgary. This is operated by the Provincial Government. Courses in Technical subjects are given to all those who wish to attend.

Commercial Schools or Business Schools.

Some of our high schools have commercial departments where students are able to learn typing, shorthand, filing and office management. Other business schools are owned by private people who charge their students a fee to attend their schools.

The University of Alberta.

Students who graduate from High School often continue their studies at the University of Alberta. The main branch of the University is in Edmonton. In Calgary there is a branch known as the Faculty of Education for the training of teachers. A few University Courses are also offered at Mount Royal College in Calgary.

The University of Alberta is located on large grounds in the South West section of Edmonton. It consists of several large buildings including the Arts Building, the Medical Building, the Observatory, the Laboratories, the Education Building and the three residences Pembina Hall, Athabaska Hall and Assiniboia Hall. A six hundred acre farm is used by the students of Agriculture. The University was opened in the year 1908.

The University is divided into sections called faculties. If you intend to become a doctor you will enter the faculty of Medicine; the faculty of Law will train you to

become a lawyer, the faculty of Education will lead you into the teaching profession and so on with the other faculties.

At the end of your course you hope to graduate. If you are successful you will attend a ceremony called "Convocation". You will be given a diploma or degree from whichever faculty you have attended.

The University charges a fee but this is not by any means large enough to pay the cost of your training. The balance is made up from grants from the Government and gifts from interested people. A great deal of valuable equipment is in use in the University. There is a library containing thousands of books.



THE ARTS BUILDING - UNIVERSITY OF ALBERTA

The Banff School of Fine Arts.

The town of Banff, is the home of the Banff School of Fine Arts, operated by the Department of Extension. Each summer the Department of Education and the Institute of Technology and Art give courses in music, art, dramatics, arts and crafts and oral French. People from all parts of the world attend these courses which they combine with a glorious holiday in the mountains.

Alberta Society of Artists.

The Alberta Society of Artists was organized in 1931 to help Albertans who were interested in Art. Members are scattered all over the province. The two main locals are in Edmonton and Calgary. Each year in January or February an exhibition of art is held in these two cities. The society has a grand display of art at the Edmonton Exhibition and at the Calgary Stampede. Travelling exhibits go to several other centres in the province.

The Alberta Society of Artists holds regular meetings and publishes a monthly paper "Highlights". Many people in Alberta are becoming interested in sketching and painting.

CHAPTER III: RANCHES AND CATTLE KINGS

Ranchers Arrive

The prairies of Alberta were once covered with long waving grasses. This was the food of the buffalo that roamed over our great plains. Men who liked adventure, and wanted to settle in a new land, decided that cattle could feed on these grasses just as well as the buffalo had done. From the British Isles, the United States, France, and Eastern Canada came ranchers. Some drove their stock up from Montana, others bought a few head of stock from other ranchers and built up their own herds. It was a long hard trip into the "West", but for those who loved adventure there was nothing more thrilling. During the summer the cattle could feed on the wild grasses. In the winter they could eat the hay that was "made" during the summer. The chinooks of Southern Alberta were a great help to the ranchers. They removed the deep snow and made it possible for the cattle to rustle or find their own food almost all winter.

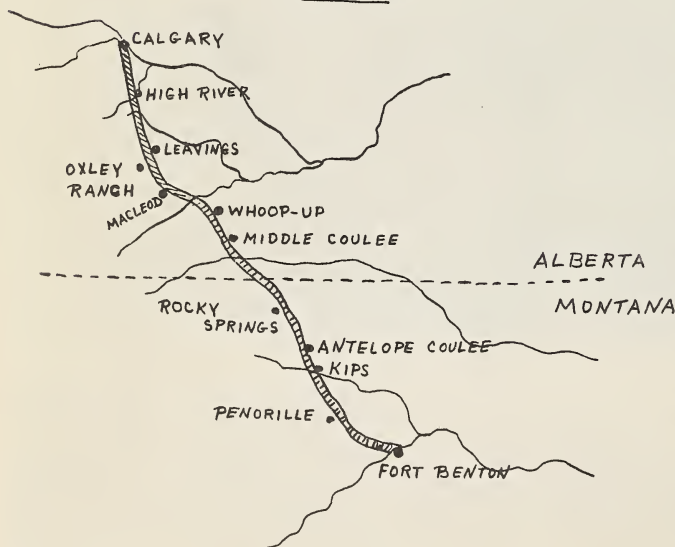
The Canadian Government gave leases on the prairie ranch lands. A rancher could have as much as one hundred thousand acres of land at a rental of one cent per acre. His lease allowed him to "run" cattle on this land.

The ranch house was often built in a sheltered river valley where there was a supply of water for the herds and protection from winter storms. Around the ranch house were built barns and corrals for the use of the rancher and his cowboys. He usually planned on buying the home ranch from the Government when he got enough money.

The Cattle Kings held sway on the prairies from about the year 1880 until 1905 when Alberta became a province, and settlers interested in farming, began to arrive in larger numbers. The coming of the farmers did not mean the end of ranching. It meant that the days when the cattle roamed

OLD TRAIL - 1882

FORT BENTON to CALGARY
335 MILES



as they pleased over the unfenced range land was coming to an end. We still have many large ranches in our province. No longer do the ranchers allow their cattle to spend months at a time on the unfenced range.



--Photo by Rosettis, Calgary, Alberta.

RIDING HERD!

The Round-Up

In the early days of Alberta, before the land was settled, large herds of cattle and bands of horses roamed the open range.

Each year at various points in the country, the ranchers and settlers who owned the stock, met together, usually at the nearest large ranch, and prepared to bring all the animals to one place. This was known as a "Round-Up", and was by one and all always looked forward to as an exciting event.

To one of the ranches from which the Round-Up was to begin came cowboys with

their strings of horses, and their bedding rolls. They were equipped to live on the range for several weeks until they could locate and round up all stock that had been feeding during the year on the lush wild prairie grass.

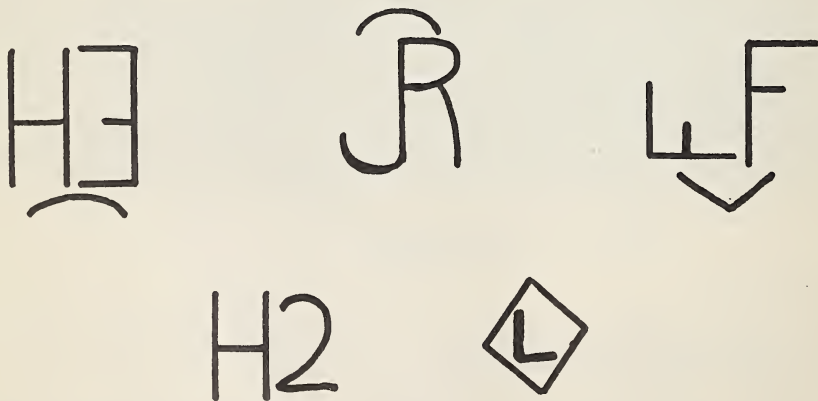
Besides spare horses each large ranch supplied a covered wagon, known as a "chuck wagon". It carried, as well as the cook, a stove, cooking utensils and supplies of food. Beef was butchered on the spot whenever needed.

Besides the chuck wagon there was another wagon carrying bedding rolls and sometimes a tent or two. Those riders not attached to any outfit, brought their own bedding rolls and slept in the open, usually with their saddles as pillows, and paid their share towards the expense of the chuck wagon.

A Round-Up was a very picturesque sight with cowboys in their chaps, gay shirts and neck handkerchiefs, riding their sleek horses. Some of the horses were not long off the range and had been hastily named for the occasion. Such names as Tomato Can, Dynamite, Old Dutch, Young Buck, Headlight, Blackie and Pinto Pete were given them by the cowboys. Those on the chuck wagon were sometimes known as Pork and Beans, and those drawing the bedding were Bed-wagon and Starlight.

The cowboys on the Round-Up rode hard all day gathering up all the cattle, regardless of brands, into one huge bunch, around which, to hold them together, the herders rode night and day. The strings of horses belonging to the different outfits were in charge of the horse wrangler.

When everything had been gathered up, each man "cut out" those stock bearing his own brand, which he and his helpers then prepared to drive home. The new unbranded calves were usually to be found with their mothers. Those who didn't seem to have a mother with them were called Mavericks, and were shared by the different outfits.



The branding iron was made by the country blacksmith. The Government granted each rancher a symbol or sign which the blacksmith fashioned from a piece of flat iron attached to an iron handle. The calves were roped and held down while the iron which had been heated in a wood fire, was pressed upon their hides. It burned the hair off in the places that the iron touched. The hair did not grow again in that spot and for the rest of the animal's life he carried the sign of his owner on his side.

The Calgary Stampede

The days of the Cattle Kings have gone but are not forgotten. Each year in July stampede is held in Calgary. For one week the City of Calgary becomes a "Cow Town" once more. Cowboys ride along the streets, chuck wagons rumble behind trolley buses, and the smell of flap jacks fills the air. It is Stampede time.

The Calgary Stampede was first held in 1912, and has been an event to which people from all over the world have come every since.

The Stampede gets off to a good start on Monday morning with a huge parade. The Indians in native costume are a very important part of the parade. Braves, squaws and apaches, all ride along the streets of Calgary. Behind the Indians come the cowboys and old timers dressed as they did fifty years ago, and travelling on horseback, by red liver cart, buggy or stage coach. Then comes Modern Alberta with its floats, showing how we live today. It is a colorful sight.

Down at the Fair Grounds the Indians take over one corner of the grounds. They set up their teepees and camp for one week right in the City of Calgary. Each day they mount their horses and ride to the centre of the city where their costumes are judged.

During the week, afternoon and evening, performances are held in front of the grandstand. Riders flash out of the chutes on bucking bronchos, cowboys rope and tie calves, other cowboys decorate or ride wild steers. One of the most interesting events is the chuck wagon races. Here there are thrills and spills as the outfits speed around the race track. Often chuck wagons crash into each other or lose wheels, but that only makes the show more interesting.

While the Stampede is in town there is a large and interesting exhibition of livestock. Here you will see some of the world's best cattle, sheep, horses, pigs and poultry. The farmers find the displays of machinery and farm equipment most interesting. Several buildings are filled with exhibits of all kinds. Of course there is the midway where you can ride on sky rockets, tour the "bug house", or eat hamburgers.

The show ends on Saturday evening with a large display of fireworks. The citizens of Calgary put away their cowboy hats and Calgary settles down to a normal life for another year.

Unchng Days Are Here Again

We know that the rancher had to move out to make room for the grain farmer. Much unchng land was homesteaded when it was discovered that an excellent quality of wheat could be grown in Alberta. Ranchers became farmers.

The picture has now changed. Much of the farm land in the eastern parts of Alberta is once again becoming ranch land. There is a very good reason for this.

In the early days the ground was covered with lush prairie grass. The grass covering held the moisture. Evaporation did not take place very quickly. When the land was broken up for farming it did not hold the moisture left by our winter snows. The land became very dry - so dry that the yield of the crops was very low. Weeds such as Russian Thistle, a dry country weed, choked out what was left of the crops. The farmers became poor, many moved to the northern parts of the province, others gave up farming. This left large areas of land vacant. Where there had been ten farmers there is now perhaps only one. That one is often quite successful. You may wonder why.

Land that is not being farmed is once more covered with prairie grasses. The moisture does not evaporate as it did in grain growing days. We find these areas now containing much pasture land. The farmers are able to grow enough grain to feed their stock for the winter - perhaps they are even able to sell a little. Sheep and cattle ranches have returned to the area east of Hanna and south to the Cypress Hills.

It is unfortunate that these parts of Alberta were not left to ranching instead of being broken up for farming. A few good crops were grown, as you can tell by the number of foundations of grain elevators in the towns, but lack of moisture meant failure for the farmers. A covering of grass was necessary to hold the moisture when the hot summer winds came. The roots of the grass put "body" into the soil.

Ranching Areas of Alberta

Alberta is still the home of great Canadian ranches. There is the short grass area along our eastern border. The long grass belt is in the foothills west of the main north and south line of the C.P.R., extending several miles north of Calgary. Northern Alberta is also a great cattle feeding area. The season in parts of the province is rather short for the growing of wheat. Tame hay and coarse grains are grown in place of wheat. This makes good feed for the stock.

The Modern Rancher

Modern ranchers do not have such large areas to pasture so what they lose in quantity they must make up in quality. The herds are better. Ranchers have done a great deal to improve their herds. The Department of Agriculture is giving valuable help in the improvement of livestock.

The Western Stock Growers' Association is a group of men who raise cattle for sale as beef. They work for improved herds and better markets. Several breed associations have been formed including the Hereford Association, the Shorthorn Association, and the Aberdeen-Angus Association.

The Calgary Bull Sale is an important event in the lives of Alberta cattlemen. Purebred bulls sell for very high prices at this sale. The Bull Sale is held in Calgary and is the largest sale of its kind in Canada. The Provincial Government now pays one quarter of the cost of a purebred bull. This helps the cattle raisers improve their herds.

One of the enemies of the rancher is the warble fly. The larvae live under the hide of the animal and cause great discomfort. In the spring they break through the hide as full grown grubs. They are not satisfied with the damage they have done this far - in the summer they torment the poor animals.

Ranchers, farmers, the Dominion Government, the Provincial Government and the Stock Growers' Association have all taken up the war against the warble fly. If the cattle are sprayed while the grubs are still under the skin it will kill them, but of course the damage is done to the meat and hide that year. The next year, however, there will be fewer warbles. You see, after a few years, Mr. Warble Fly will disappear. This has happened in several districts of Alberta.

The modern rancher is able to have a healthier herd because he can use medicines discovered during the last few years. Sulpha drugs are used to drive away infection and not only save the lives of that herd, but also keep diseases from spreading to other herds. The University of Alberta and the Agricultural Schools train veterinarians whose job it is to look after the health of stock. When a cow or horse gets sick you send for the veterinarian. Sometimes, in winter, he has to fly, but it is worth the expense to save the life of a sick animal. Healthy stock makes happy ranchers and farmers.

In the olden days bad winter storms often cost the ranchers half their herds. Cattle would be driven for miles by a blizzard. (They will never face a storm). Finally many of them would become so tired, hungry and cold that they would drop. In one winter ranchers lost half their herds in blizzards. Bodies of dead cattle covered the countryside when the snow disappeared in the spring.

Now the ranches are smaller and fenced. It is easier to know where the cattle are at any time. In a few of the large ranches airplanes are used to fly over the herds and see that everything is in order.

Chinooks

The rancher is always happy when he sees a chinook arch forming in the western sky. A chinook is a warm wind which blows through the mountain passes and removes the snow from the prairies of parts of Alberta. To the rancher it means that the cattle will be able to find their own food on the range. When the snow is gone the cattle will be able to feed on the prairie grasses that are uncovered.

Moist winds which blow in from the Pacific Ocean strike the land and are forced up to a higher altitude. The moisture in this air condenses and falls as rain. As it reaches still a higher altitude it becomes very cool, and the water vapor freezes and snow falls. Then it comes down the east side of the mountains. As it reaches a lower altitude the air is warmer and it is able to hold more moisture. This moisture it picks up from the snow covered prairies. The snow disappears as if by magic.

The Indians have a pretty legend about the Chinook. Once upon a time there was a beautiful maiden whose name was "Chinook". One cold day in winter she wandered into the foothills and mountains and became lost. The braves searched for her but could not find her. One day a warm wind came over the mountains, melting the snow as it came. The Indians said, "It is the breath of our lost maiden, the beautiful Chinook."

THE CHINOOK



Tales About Chinook as Told by the Indians and Old Timers

One winter there was a very heavy snowfall in the mountains. All but the tip of the steeple of the church at Morley was covered with snow. The Indians used to come to church every Sunday and tie their horses to the steeple. The minister dug a tunnel to the door of the church for the congregation to enter. During church one morning a chinook came, and after the service the Indians found their horses dangling from the church steeple.

One winter day an Indian and his wife were driving in to Calgary from Morley. A chinook came up behind them and took the snow off so fast that the back runners of the sleigh were on the ground, but the front runners were still on the snow. The Indian whipped up the horses, but could not go fast enough to get the back runners up on the snow. He finally reached Calgary. His feet were frozen and the squaw had a bad case of sun stroke.

The Vauxhall Provincial Grazing Range

The Government of Alberta has set aside a grazing range near the town of Vauxhall. It is really a great pasture in charge of a caretaker. Its area is over seven townships. Some of the land is covered with lush prairie grass, other land has at one time been too closely grazed by sheep, and is still only bare sod. Sloughs and lakes supply water for the stock. The range is fenced and cross fenced.

The farmers take their cattle to the range early in the spring. Until October they become "boarders" of the Provincial Government. The owner pays a monthly fee for each animal he leaves on the range.

The Provincial Government is very particular about the health of its boarders. If one animal had a disease it would not be long before all the animals were infected. The pasture is a "warble-fly" free area, so special care is taken to make sure that all the cattle are sprayed to prevent them taking warble flies with them to their summer

ome.

Then the cattle arrive they are placed in a corral and must pass in single file through a chute to another corral containing several pens. Of course they are inspected as they go through the chute. They are branded before they come to the range, but while passing through the chute they are also ear-tagged, just to be sure they will be returned to their proper owner at the end of the season. A careful description of each animal is taken upon entry. They are now ready to be driven off to the section of the pasture that is to be their summer home.

Not all the guests are cattle. Horses that are not needed on the farms during the summer are also accepted. Some sections of the range are reserved for sheep. The care of the sheep is in the hands of a "herder" hired by the farmer.

The cattle and horses are supervised closely during the summer. Riders keep watch over them all the time and drive them to the best parts of the pasture. They see that no sickness breaks out amongst the boarders and care for any accident victims.

The life of the herder is much different than it was in the early days. Instead of a chuck wagon he now has a rubber tired trailer which is moved about the ranch. It is fully equipped for comfort, even having a clothes-closet and radio.

Early in October the riders begin bringing the cattle in to the holding pastures or corrals. October 15th is the day the farmers arrive to take home the stock. It is a noisy place with bawling cattle of all sizes. The bigger they are the louder they bawl.

The cattle all pass out through the narrow chute where they are identified by their ear-tags. They are put into holding pens until each owner has collected all his cattle and is ready to start for home. Sometimes they are a frisky herd after being penned up in a corral for a few days. A good saddle pony is a great help in taking them home.

Holidays are over for these cattle for another year.

Sheep Ranching

A very important branch of ranching is the raising of sheep. Sheep are happy if they can find some grass or weeds for their food. They will be able to feed themselves for a long while on a pasture that horses and cattle have left because they could find no more to eat. There are two ways of raising sheep. The first is on a large ranch where the sheep are under the care of a herder. The second way is to raise a few sheep along with other farm animals.

On the large sheep ranches the lambs are born in the open in early spring. If spring is late in coming the ranchers often lose many lambs. The Merino sheep is a common variety in Alberta, as this type is quite hardy.

The herder's best friend is his dog. Sheep dogs are very wise and seem to understand every sign the herder makes. One herder and a good dog can look after a great number of sheep.

At lambing time there are always a few little fellows that have to be brought up

on a bottle. They are called "bummers", and become great pets.

After the lambs are born their mothers are sheared and in their short coats the set out for their summer pastures. The wool is sent to the factory to be made into clothes and blankets. The lambs are ear-tagged before they leave for the range. Of course some of the lambs find their way to the butcher shop and become "fresh spring lamb".



WOOLLIES BY THE MILE

--N. F. B. Photo

CHAPTER IV: AGRICULTURE

Farmers Arrive

The fur traders were not pleased to see the ranchers coming into the country and driving away the fur bearing animals. In their turn the ranchers were not pleased to see the farmers coming, for it meant the end of the open range. The soil of the country was excellent and the climate healthful. Settlers came in spite of the discouraging words of the ranchers. Alberta became an agricultural province. Over one hundred million bushels of wheat are shipped from Alberta each year. Think of the hungry people of Europe that would feed.

Early Farmers

Peter Pond, a fur trader from the United States, raised vegetables at his fort on the Athabaska River in 1779. He may have even grown a little grain. There are other reports of grain growing in Northern Alberta by the Northwest Company.

The first real grain grower in Alberta was William Cust. He had been a fur trader along the Peace River and sold his trading post to the Hudson's Bay Company. With the money he received he started farming at St. Albert, next to the Roman Catholic Mission. In 1881 he had quite a large farm and a good crop. His wheat fields of 180 acres yielded thirty bushels per acre, his thirty-six acres of barley yielded thirty-six bushels per acre, and his twelve acres of oats yielded twenty-five bushels to the acre. How do these fields compare with those of the present time?

Cust farmed in the St. Albert district for about thirty-five years. His farm equipment included a binder to cut his grain. It was the first binder in Alberta. The meadows were tied with wire instead of with binder twine.

Dick Steele and Billy Inglis farmed at Beaver Lake near Vegreville. In 1882 they had their first crop of wheat, oats and barley. They finished planting their crop on May 4 and harvested it in August. The grain was of a very good quality.

A group of Catholic Fathers at Fort Chipewyan grew a small quantity of red spring wheat around the year 1875. A sample of this wheat found its way to the Exhibition at Philadelphia and won first prize.

In the year 1893 the Reverend J. Gough Brick won the world's wheat championship at the Chicago Fair. He grew his wheat on the Anglican Mission Farm near the town of Peace River. This farm had good equipment, including a thresher.

Southern Alberta also had pioneer grain growers. Joe McFarland, an Irish settler, grew wheat and oats near the Old Man River at Macleod, as early as 1882. The oats he sold to the Mounted Police for their horses. He had been promised a grist mill by a man in Calgary but it did not arrive. Instead of milling his wheat and selling flour he sold it as chicken feed.

Wheat growing in the Pincher Creek district started from one head of grain. Francis Willock, in 1884, planted part of the grain from this one head (the mice ate the

rest) in a flour barrel. The following year he planted his crop of 1884 in his garden. In 1885 he had almost an acre of wheat. A neighbor won a prize with this wheat at the Chicago World Fair in 1893.

Father Lacombe deserves a good deal of credit for the part he played in developing agriculture in the west. Through his teaching the Indians and Half-breeds learned how to farm. Instead of hunting buffalo many of the Indians learned to grow their own food. Father Lacombe brought the plow to the west and built the first grist mill in Alberta.

Pioneers

In 1883 the Canadian Pacific Railway reached Alberta, linking the country up with Eastern Canada. Over this railway in the next few years streamed thousands of settlers. The days of the long trek by Red River Cart were over. The railway cost the country and the Company a great deal of money. The easiest way to get this money paid back was to bring out settlers who would grow crops and ship them east by rail.

For building the railway the C.P.R. received large grants of land which could be sold to settlers. These lands were always near the railway line and therefore were quite popular with newcomers.

The Government also wanted to encourage people to come out to the West and settle on farms. Any man over eighteen years of age and any woman who was head of a family was allowed to take out a homestead. A homestead consisted of one hundred and sixty acres of land. Each settler paid the Government ten dollars for the right to homestead. Now, this was very cheap for land, but there were certain things the homesteader must do. He had to build a house and live on his homestead for at least half of each year, the rest of the time he could perhaps work for a rancher. Each year he must plow or break a few acres and plant a crop. If he did these things the homestead became his own after three years.

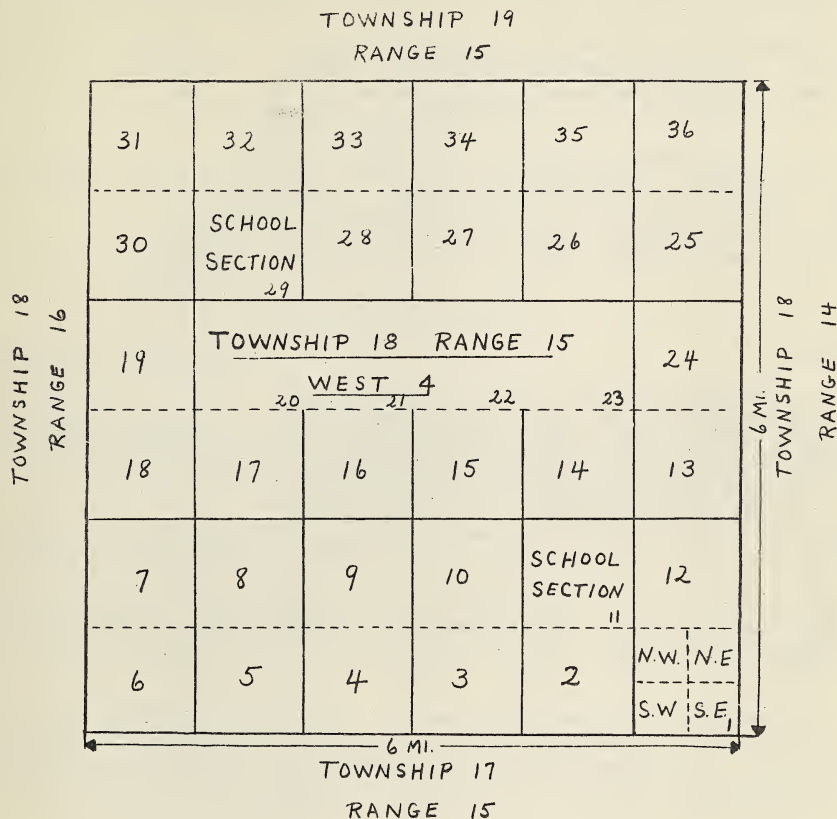
Land offices were busy places, for it was here that homesteaders paid their fees and claimed their land. Before any district was "thrown open" for homesteads it had to be surveyed or marked off into quarter sections.

Surveying the Land

It was very important that each piece of land should be clearly marked. There were no fences, of course, to separate the homesteads. Surveyors started numbering from the south east corner of the province. A six mile square was marked off in this corner. This was called Township 1. Township 2 was the six mile square directly north of Township 1. Township 3 was north of Township 2. As you travelled north the numbers of the townships became larger.

The block of land in the South east corner of the province, besides being Township 1, was known as Range 1. Range 2 was the next six mile square to the west. Range 3 followed Range 2, and so on. Range numbers became greater as you travelled west.

The Saskatchewan border was known as the fourth meridian and a line running north and south through Calgary was known as the fifth meridian. Range numbers started at 1 at each meridian line.



PLAN OF TOWNSHIP 18 RANGE 15
(HEAVY LINES ARE ROADS)

The townships were divided into one mile squares called "sections". Each township contained thirty-six sections numbered from the south east corner and ending at the north-east corner.

Each section was again divided into four parts called the South-East quarter, the South-West Quarter, the North-West Quarter and the North-East Quarter. In the South-

East corner of each section an iron peg was driven into the ground. On the peg was stamped the section number, the township number and the range number. The surveyors dug four small holes around each peg. In each corner of the quarter sections four holes were also dug.

Settlers used to go out and look the land over and pick out the quarter section they wished to homestead. They would copy the number off the peg and rush back to the land office to make their claim.

Land numbered like this "S.E. $\frac{1}{4}$, Sec. 4, T. 35, R. 16, W. 4" would mean, "The South-East Quarter of Section four, Township thirty-five, Range sixteen, West of the fourth meridian. Use the scale on a map of Alberta and see if you can find this piece of land. It is near Hanna.

The Homestead

When the homesteader had filed his claim on his land he took the train to the town which was nearest to his homestead. It may have been a hundred miles away. In this town he bought his equipment, which usually included a team of horses, a wagon, a walking plow, and a supply of groceries (a grub stake). Then he set out in the wagon across the prairies. He was lucky if other settlers were going at the same time. It meant something to have company on an adventure like this.

The first thing to do upon arrival at the homestead was to build a house. If other settlers were already in the district he would stay with a neighbor while he was building some kind of a house. If he happened to be the first settler he lived in a tent or under his wagon.

The first house was often a "dug-out" or cave in the side of a hill. The front of the cave was built up with sod and stones. A door was made of the packing boxes he brought with him. This home was not very comfortable, but it served the purpose until something better could be built. It gave the homesteader a place to live while he was plowing some land for a crop.

The sod shanty was another type of home for the pioneers of Alberta. Poles were cut to build the framework of a small hut. The roof was covered with smaller poles. With his plow the settler turned over furrows in the grassy prairie. These he cut into sections or sods and piled them one on top of the other around the framework. This reminds us of the way the Eskimo builds his igloo. The poles on the roof were covered with more sods. If the settler had been thoughtful enough he would have brought a roll or two of building paper to line the inside of his shanty. Perhaps he even had a window. U

Sod houses were warm in winter and cool in summer. Unfortunately the sods had the habit of shrinking and a new house had to be built every two or three years. When the settler found that his roof was leaking he started to build a new house.



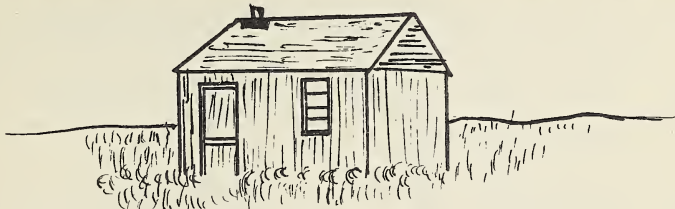
● IRON PEG



FOUR HOLES AND AN IRON PEG

(This marked the corner
of the homestead)

Of course the homes of all the pioneers were not made of sod. Those who lived near a wooded area were able to get logs. Log houses were much better and cleaner than old shanties. You may see some of these old log houses still standing today. The chinks were filled with mud and the walls whitewashed. Sawmills operated in some parts of the province. If the settler lived near one of these mills he was able to have a much better home.

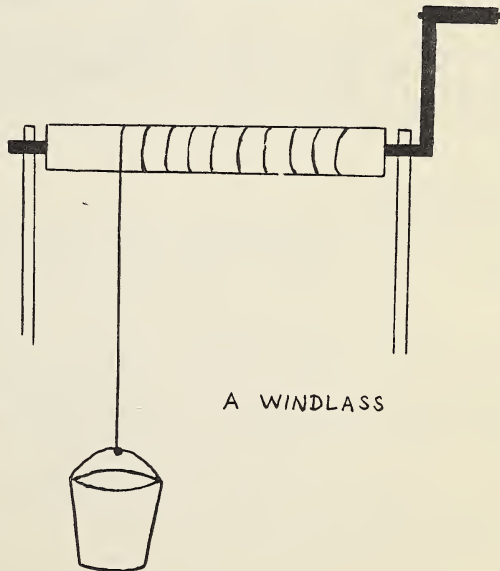


A HOMESTEADERS' SHACK

The Water Supply

One of the biggest problems the homesteader had to face was that of getting a good water supply. Before the land was "broken up" there were many sloughs and creeks. These usually supplied water for the stock but it was not fit for the homesteader to drink. Perhaps there was a spring close by, but if not, he must dig a well.

Digging a well required the help of some of the neighbors. It was easy digging for the first few feet but once the man got down out of sight he had to have someone to pull dirt up for him. This was done with a windlass. The man in the hole filled the pail and the man above pulled it up. Sometimes there were rocks in the hole which made digging very hard. When water was struck (sometimes it was a dry hole), the settler ribbed in the well. This was done by lining it with boards or rocks. A cover was built over the top of the hole to keep people and animals from falling down the well.



A WINDLASS

The settler tied a pail to a rope and lowered it into the water. When the pail was full he pulled it up. Those who wanted to be a little more modern used a windlass or crank to pull the pail up. Others made a tripod from poles and used a pulley. These last two devices made it unnec-

essary for the settler to lean over the well. It was safer this way because a person could easily slip and fall down the well while pulling up a pail of water.

Planting the First Crop

One of the first jobs of the homesteader was to plant a crop. He hitched his two horses or two oxen to his little walking plow, and started turning over the rich prairie sod. It was a slow job as the plow was small. In each hand he held one handle of the plow and around his waist he looped the reins, with which he guided his horses or oxen. The sod was tough. Oxen were more powerful but much slower than horses. The only time the oxen really hurried was when the heel flies attacked them. Then they "took off" for the nearest slough, taking plow and farmer along with them.

When the soil was broken it was left to rot before it was disc-harrowed. A disc harrow is a piece of machinery used to chop up the lumps of earth.

The following spring the farmer planted his wheat by scattering it over the land by hand, just as was done in Bible times. Of course in later years the homesteader bought a drill to seed his grain.

Harvesting the Crop

Harvesting was sometimes done with a scythe. This was slow work so the farmer tried to get binders which would cut the grain and tie it into bundles. The bundles were stooked to allow them to dry out.

Threshing was usually done with threshing machines which travelled out from Manitoba or up from the United States. The farmer paid the thresherman for doing the job. The threshing machine was usually powered by a steam engine which burned straw. The threshing outfits travelled from farm to farm until the job was done. It was not long before Alberta farmers began to buy threshing outfits of their own.

Prairie Fires

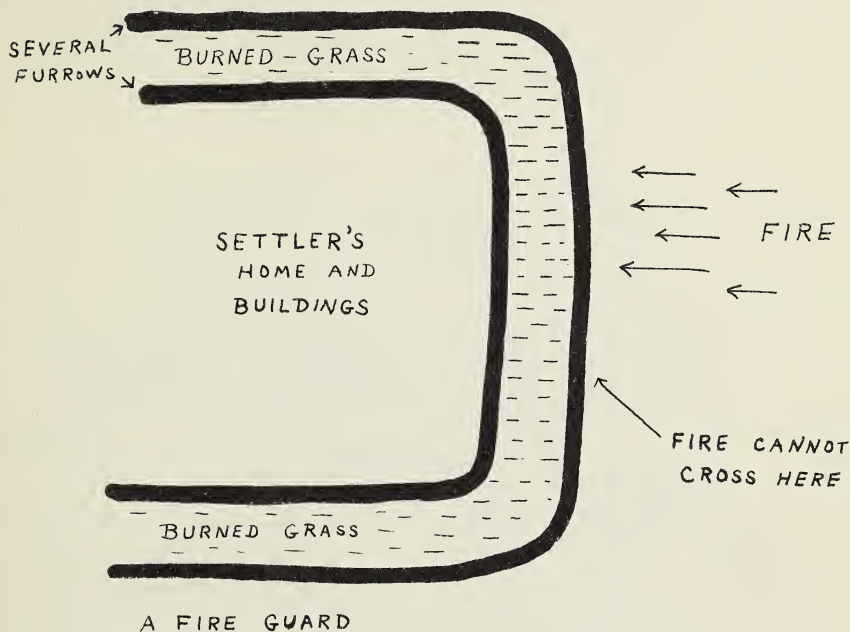
One of the chief worries of the new settlers was the fear of fire. In the Spring and Fall there were large stretches of dry prairie grass which would catch on fire very easily. As the land was broken up, the danger of fire lessened.

Settlers soon learned to protect themselves from fire by ploughing fire guards around their buildings and even around their farms. Several furrows were ploughed and a few yards inside these furrows there was another strip of ploughed ground. Between the two sets of furrows there was a grassy space. When a fire was sighted the settler set fire to this grassy space. Once the grass had been burned off the fire could not cross it.

At the first sight of smoke settlers from all around rushed to the scene on horseback. Some would plough fire guards and others would beat out small fires started by blazing grass carried by the wind.

Prairie fires sometimes travelled very fast. One rancher rode as fast as his

orse could gallop to remove some hay that had been spilled on his fire guard while he as hauling hay. He won the race and stopped the fire from crossing the fire guard. Had t not been for his swift horse the fire would have overtaken him.



At one time a prairie fire started west of the Red Deer River and travelled east. hen it reached the river it was burning so furiously that blazing grass was blown a-ross the water. The fire continued on its way on the other side of the river.

One of the "Safety Firsts" of the pioneer was "Be Careful with Matches".

Agriculture Today is Alberta's Most Important Industry.

Agriculture is by far the most important industry in Alberta today. More than alf the people of Alberta live on farms. Grain farming, mixed farming, dairying, ranch- ing and several special branches of farming make up this great industry.

ur Water Supply Comes from the Mountains

Agriculture depends for its success ~upon a good water supply. The water which upplies our farms comes from our cold storage system high up in the Rocky Mountains.



--N. F. B. Photo

COMBINES AT WORK

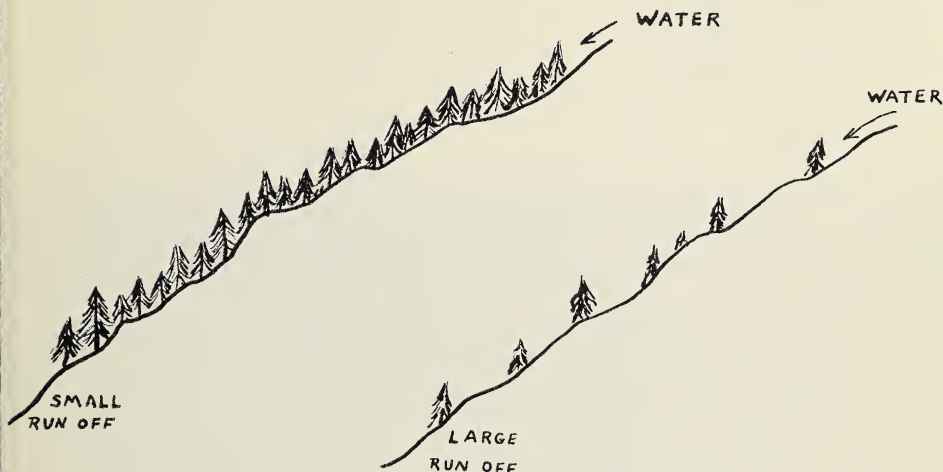
Each winter great masses of ice are formed in the mountains. Without this supply Agriculture would be impossible in Alberta, our crops would not grow, our wells would dry up and Alberta would become a desert.

The great snowfall in the mountains would not be of much use to us if we did not have some method of controlling the spring run off. The forests on the eastern slopes of the mountains hold the moisture. If our forests were not there the spring waters would soon rush down the mountains, swell the rivers and disappear very quickly. The forests spread the "run off" over the whole season.

The heat of the sun causes water to evaporate from the earth's surface. When it reaches the cooler air above us the water vapor in the air is condensed to form mist or clouds. These tiny droplets join together until they form drops heavy enough to fall as

n. Again evaporation takes place, clouds form and rain falls. This is called "the water cycle." Of course winds often blow the clouds across the sky and the rain does not fall in the same place as the evaporation took place.

It is better for agriculture if evaporation does not take place too quickly. We do not want the soil to dry out. Our trees shade the earth and make evaporation take place much more slowly.



We must protect our forests. Large forested areas have already been cut down. Each year our lakes are getting lower and lower. Unless more trees are planted to take the place of those that are cut down, we will not be able to make such good use of the water with which nature supplies us. Of course forest fires are a great enemy of those people who depend upon a supply of water from the mountains. Our Government has appointed a group of men whose duty it is to help protect our forests and water supply.

Irrigation Brings Large Areas of Land under Cultivation

Large sections of Southern Alberta have excellent soil but little rainfall. It lacks both moisture and a rich soil to grow a good crop. It is here that irrigation is useful. Irrigation depends upon a steady flow of water in our rivers, and a steady flow of water depends upon a good forest covering in the mountains.

Irrigation is a method of watering the land. Water is taken from rivers or lakes to large ditches. Branches or smaller ditches lead off the large ditches. Again small ditches lead across the fields. Crops are planted in the fields and are irrigated by this water that finds its way through the soil to the roots of the plants. As the blood flows out from our large blood vessels to the tips of our fingers and toes, so the life

giving water flows out to all parts of the field. The farmers are able to open and close gates in the irrigation ditches to control the amount of water they require.



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H. POLLARD Calgary

--Courtesy of H. Pollard

IRRIGATED LAND IN THE BROOKS DISTRICT

In 1878 a rancher built a dam across Fish Creek, just south of Calgary. He diverted the water to his hay meadow and irrigated fifteen or twenty acres. From time to time other small irrigation systems were used.

Alberta now has about twenty irrigation schemes. Most of them are east and south east of Calgary, near Lethbridge and Taber, in the Medicine Hat District, and south of Macleod. Areas that were once so dry that it took forty acres to feed one head of stock

are now producing good crops. Grain, sugar beets, vegetables, honey and fruits are some of the products that come from our irrigated districts.

The St. Mary-Milk River irrigation project is a vast scheme to supply water to over one third of a million acres in Southern Alberta. It also increases the water supply to 120,000 acres formerly irrigated.

The completed project will likely cost close to twenty million dollars.

About thirty miles west of Lethbridge the St. Mary River is dammed up to form a huge reservoir. The dam is one hundred eighty-five feet high, thirty feet wide at the top and one quarter of a mile wide at the base. Its length is half a mile. This is the largest earthen dam in Canada.

It is not an easy task to build a dam across a river. The water cannot be shut off while work is going on - it must be diverted to another channel. No other channel existed, so engineers had to make one. A huge diversion tunnel 2100 feet long and twenty feet in diameter was bored through solid rock. This was used to carry the river water away while the dam was being built.

A second tunnel 2500 feet long and seventeen feet across is used to carry water to the irrigation system. This is known as the irrigation tunnel.

This newly irrigated section should provide needed water to the lands of about 300 farmers. New towns are expected to spring up in the district to supply the needs of the farmers living in this fertile area.

Sugar Beets

The growing of sugar beets requires three conditions; good soil, long hours of sunshine, and a plentiful water supply. The irrigated land of southern Alberta is an ideal spot for this branch of agriculture. Over a million pounds of sugar are produced each year from the factories at Raymond, Picture Butte and Taber. The first crop was harvested in 1925.

The land on which the sugar beet crop is grown is carefully prepared to receive the seed. In the fall most of the land is plowed so that the moisture from the winter snows will sink into the soil. When spring comes discing and harrowing are done. If the land is not very level a leveller is used to fill in the hollows and flatten out the little hills. To make sure that the soil is rich in minerals the beet grower uses fertilizer. He plants other crops besides beets on the land some years. Some of the minerals the other crops put into the soil are just what the beet crop needs. The method



IRRIGATED AREAS OF SOUTHERN ALBERTA

of changing crops from year to year is known as "crop rotation". Wise farmers know that they will have better crops if they use a system of crop rotation.

The beet seeds are planted with a drill in April and May. In about two weeks the seed begins to show through the ground. High winds and cutworms are the farmers' worst enemies at this time. When the beets first come up they are very thick. The farmer cuts out a large number of them and leaves little clusters about twelve inches apart. This is called "blocking". Then the weakest plants are taken from each cluster. Only one strong plant is left and it has plenty of room to grow. This job is called "thinning". The plants must be carefully cultivated during the season.

Beets need plenty of moisture. Between the rows are dug small ditches or furrows. The water from the canals is turned into the furrows and runs along between the rows of bright green beets. Hoeing the beets to remove the weeds and loosen the soil is a very important and hard job.

Sugar beets have a long silver white root, sometimes stretching as much as six feet into the soil. The rows of vivid green tops with silver ribbons of water between them make a very beautiful sight.

Late in September harvest time arrives. The beets are loosened with a lifter and removed from the soil. A machine cuts off their tops and loads them into trucks. The beets then go to the factory where men can remove from them the sweetness that nature has stored up during the summer.



PILES OF SUGAR BEETS

--N. F. B. Photo

As the loads come in they are weighed and dumped. Belts carry them to huge stor-piles which cover several acres. As they are needed they are taken from the piles placed in a ditch or flume, filled with running water. They are washed as they travel along to the factory. More washing takes place at the factory until the beets are tlesly clean. Next sharp knives slice the beets into shreds ready for the sugar to removed.

The method of removing the sugar is something like making tea. The shreds of ced beets are steeped with hot water under great pressure. The sweetness from the ts becomes mixed with the water. They are steeped several times. The sweet "juice" then taken to the purifiers. The pulp is removed and used to feed cattle.

The boiling juice is placed in great tanks where it is purified with lime, and bon dioxide gas. It is now filtered (strained) and sulphur is added. It is boiled in and tiny crystals begin to form. Then it is whirled around very quickly in a drum. drum is lined with a brass screen, through which the sugar crystals cannot escape. material which goes through the screen is called "molasses". The sugar is dried with team of warm air. It is sorted and sacked and sent off to your grocery store.



--Alberta Government Photograph
CLEARING BRUSH AT WANHAM

Veterans' Farms

After the First Great War a large number of veterans were established on farms. At the end of the Second Great War it was hoped that the same plan could be carried out. The problem, however, was to find land upon which the veterans could settle. Most of the good farm land was already settled or was a great distance from a railway. The Provincial Government and the Department of Veterans' Affairs worked out a plan to clear and break larger wooded areas.

One of the largest tracts of land to be brought under cultivation is near Wainwright in the Peace River District. Here the Government has set aside one hundred thousand acres for the use of veterans. The cost will be about twenty-five dollars an acre - this will only pay for clearing the land. The land itself is a gift from the government.

The land is wooded and clearing is a big job. The veterans are not going to do it themselves. The land is going to be ready for crop when they take it over. Great machines will do the work - machines so large that they will do as much work in a single day as a settler could do in two years! The power of the tractors is as great as that of a hundred horses. Great steel blades cut off trees whose thickness is at least fifteen inches. Other machines gather the trees into piles.

The soil is to be prepared for seeding for the veterans. Woodlots are to be left, for fuel supplies and wind breaks. When the job is completed this vast area will become rich farm land. The greatest land clearing task in Canada is being carried out in Alberta. The days of hard work with axe and muscle are over. Man has learned to use great machines to do his hardest jobs.

Millions of Bushels of Wheat are Grown in Alberta

The wheat growing sections of Alberta include the prairies of the south, the irrigated districts, the Parklands of Central Alberta, and the great Peace River District of the north.

Alberta's wheat is famous for its milling qualities. It is hard and makes excellent flour. The long hours of Alberta's summer sunshine, help us grow such a good quality of wheat. Alberta farmers are learning to use registered seed which grows the best crops.

The farmers of Alberta, the Provincial Government, the Dominion Government, and scientists have all worked together to develop a good quality of grain. Perhaps you have noticed little seed testing plots marked off in some of our rural districts. These are the places where agriculturalists are experimenting. They are trying to develop the best type of grain for each district. The best way to tell whether a certain variety will grow in a particular district is to try it out.

The following are some of the varieties of wheat that have been developed:

1. Marquis Wheat is one of the oldest varieties grown in Alberta. The straw is long, so it can be grown in districts that have not a great deal of moisture. Marquis wheat requires a fairly long growing season. In many parts of Alberta the season is too short for this kind of wheat. Early frosts

spoil the quality of the wheat. It is sometimes attacked by rust.

2. Red Bobs is four to six days earlier than Marquis. It can be grown in areas with earlier frosts. Its disadvantage is that it shells easily. Many kernels fall to the ground and are lost.
3. Rescue is a variety of wheat which is not easily destroyed by saw flies.



--Photo by H. Pollard

ACRES AND ACRES OF WHEAT

The Farmers' Enemies

The farmer is lucky if his crop is not damaged by at least one of a number of enemies. The Field Crops' Branch of the Department of Agriculture has a number of experts whose job it is to help the farmer fight his enemies. The following cause a great deal of damage:

1. Rust is a disease that uses up the food intended for the plant. The plant shrinks and the yield is poor. The best way to fight rust is to use varieties of wheat that are not attacked by this disease.

2. Wireworms and Cutworms cut off the growing plants just below the surface. The birds help the farmer rid his fields of these pests.
3. Grasshoppers have a big appetite. As soon as they hatch they start feeding on the young plant and keep it up until they are full grown. They have been known to move over large areas of Alberta eating up all the grain as they go. Poisoned bait supplied by the Department of Agriculture is one way of fighting this enemy.
4. The Wheat Stem Sawfly lays its eggs in the stem of the wheat just when the heads are forming. The grubs, when they hatch, eat away at the stem until it breaks off.
5. Gophers like to have a share of the crops. Snaring, shooting and poisoning help lessen their numbers.
6. Hail is an enemy that cannot be fought. When the hail clouds form in the sky there is nothing the farmer can do about it. If a bad storm comes the crop is flattened and destroyed. Many farmers insure against hail. They pay a sum of money or premium to an insurance company, and if a hail storm destroys the crop the farmer receives money from the company to help pay for his loss. Of course if hail does not destroy the crop the farmer must still pay his premium.

Marketing Grain

Most of the people who buy Alberta's grain crops live thousands of miles across the seas. The farmers sell their grain to large grain companies who collect grain in their elevators and ship it to Fort William and Port Arthur where it is loaded on grain boats and sent to Europe. Some goes to Vancouver. Most towns in the growing districts of Alberta have several large elevators to which the farmers deliver their grain. Have you ever noticed the large number of box cars around these elevators? These are the cars that will be loaded with Alberta grain.

The Alberta Wheat Pool is an organization of farmers who operate their own elevators and marketing system. Men are elected to look after the affairs of the Wheat Pool. The farmers deliver their grain to the elevator and receive a part of the payment. The rest of the payment comes when the grain is sold. The Wheat Pool tries to get the best possible price for the wheat. The higher the price for which the wheat is sold, the greater the price the farmer receives.

Other Grain Crops

Oats

Oats grow well where the climate is moist and cool. The growing season is not long as that for wheat. Oats make a good crop in the parts of Alberta where the season is too short for the growing of good wheat crops. Oats are a good stock food. They are grown in the mixed farming sections of the province for the feeding of farm animals. Green oat bundles may be fed to the stock. Sometimes the oats are cut and stacked, threshed and fed to the stock as grain.

Barley

Barley is used for feed and malting. It is a crop that need not be seeded early in the season. For this reason it is sometimes used when spring is late in coming and the wheat crop would not be a success.

Rye

Rye is sometimes grown in Alberta. It is used in making bread and certain types of liquor. It is sown in the fall and has an early start in the spring. It holds the soil when the spring winds arrive.

Flax

Flax is one of the newer crops of Alberta. It is becoming very important, especially in the Medicine Hat district where a factory manufactures linseed oil, from flax seed. Linseed oil is used in making paints.

Mixed Farming

In many parts of the province farmers have turned to mixed farming. The mixed farmer does not depend on grain alone, as the grain farmer does. If one crop fails he has another crop. His work goes on all year - he is receiving money for his products throughout the entire twelve months of the year. The Parklands of Central Alberta are mixed farming areas.

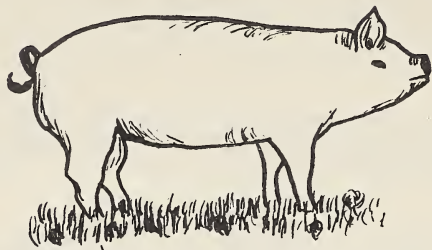
The mixed farmer grows fodder crops such as alfalfa, clover, timothy and brome grass. This provides food for his stock, and nourishment for the soil. Most of the grain grown on mixed farms is fed to the livestock.

Money in the Farmer's Pocket

The sale of livestock in Alberta brings a great deal of money to the farmers of the province. During 1948 cash receipts in the livestock industry of Alberta were greater than those of the oil, natural gas, coal, lumber and salt industries all put together. This does not mean that our other industries are not important. It means that the livestock industry is much more important than most people think it is. The daily sales in the Edmonton and Calgary Stock Yards put thousands of dollars into the pockets of Alberta farmers. Cattle, calves, hogs and sheep in 1948 sold for well over one hundred million dollars. The Parklands of the province provide excellent pastures for animals. The little streams supply water for the stock, the clumps of trees provide shelter and the little clearings supply spots upon which feed may be grown. The stock are happy in their Parkland pastures.

Some of the animals think they are lucky when they are fed extra grain. They don't know it, but they are getting ready for a trip to the stock yards. When they are fat enough the farmer loads them on a truck and off they go to town. The butcher will pay a good price for grain fed stock. It isn't long before the cows and steers that grazed contentedly on the farm at Red Deer or Innisfail are in the butcher's show case, perhaps thousands of miles away. Remember the pigs that gobbled up all the food they could find down on the farm? They are on their way to Europe. "Bacon for Britain",

they have become. Such is life for the animals on the mixed farm. It's fun while it lasts!



THIS LITTLE PIG WENT TO MARKET

The farmers often separate the cream from the milk and feed the skim milk to the calves. The cream goes to the creamery where it is made into butter. It is placed in cans, collected by truck and shipped to the dairy. The canned milk factory at Red Deer is a good market for a large amount of milk in that district.

We must not forget the chickens, turkeys, geese, and ducks that live on the mixed farms. They, too, find their way to the farmer's oven, or to the butcher shop. Whether they help fill the farmer's stomach or his pocket book, they are worth a great deal of money to him.



THE STOCKYARDS - BEEF ON THE HOOF

--N. F. B. Photo

Dairying

Dairying is, of course, carried on near the cities and towns of our province. The milk is brought to the dairies and creameries from the dairy farms. It must be fresh, so the dairy farms must be close to the large centres or on a good road to the market. Each day the milk is placed in cans and rushed to the city where it is taken over by the creameries. Here it is pasteurized, and put into bottles and cans for sale to the citizens. Some of it is made into ice cream and powdered milk.

The people of Alberta know that milk is one of our best foods. They use a great deal of it.

The modern dairy farm is equipped with the latest devices to make work as easy as possible. Running water for cleanliness, and electricity for power are two of the dairyman's best helpers. Of course milking machines are used to milk the cows on the modern dairy farms.

The days when the farmer lighted his barns with coal oil lanterns, pumped his water by hand, and sat on a stool beside the cow while he milked her, no longer exist on the modern dairy farm. The barn is a bright, clean, well ventilated place. We should have "Contented Cows" in Alberta.

The Government is very careful to inspect our dairies. Milk, if it is not clean, is a good place for harmful bacteria to live. The dairy farms of Alberta are models of cleanliness.

There are nearly half as many dairy cows in Alberta as there are people. The value of the butter produced in the creameries is about thirty-five million dollars a year. In 1888 a few farmers at Springbank started making cheese in a small factory. Now there are over one hundred cheese factories in Alberta making a million dollars worth of cheese a year.

Fruit Growing

One of the newest agricultural industries in Alberta is the growing of fruits. The irrigated districts of Alberta each year produce large quantities of fruits, including crab apples, apples, plums, watermelons, and berries. If the proper variety of trees are chosen and good care is given the crop, fruit can be grown in almost any part of Alberta. Hundreds of farmers are experimenting with the growing of fruits.

Honey

One of the smaller branches of agriculture in Alberta is the keeping of bees. The industry is becoming more important each year. Just look on your honey tin and you will see the name of some Alberta town.

Most of the bees that we have in Alberta come from California in the spring. It is hard to winter bees here. They must be packed "just so" or large numbers of them will die during the winter. For their size bees have a terrific appetite so they eat a great deal of food. Beekeepers, therefore, have found it best to "gas" their bees in the fall,

and get new ones in the spring. The trip from California is made by train or truck - the bees travel in packages.

When the bees arrive in Alberta they are taken to their hives. The beekeeper has a busy time for a few days while his bees are getting settled. However, it doesn't take long for the bees to feel at home and start gathering up honey from the neighboring farms. By late summer the hives are filled and the job is done.

There are over nine thousand beekeepers in Alberta. A branch of the Department of Agriculture inspects hives for disease and gives advice to the beekeepers.

The farmers in Central and Northern Alberta found that their soil was improved if they planted a clover crop every few years. The clover put needed minerals back in the soil. The clover grew better if there were bees in it, because the bees carried pollen from one plant to another thus fertilizing the plants as they moved from plant to plant. Bees just love clover so they were glad to gather honey from these fields. Farmers found it well worth while to keep a few hives of bees. They followed the advice of the Department of Agriculture and the beekeeping industry moved farther north.

The Provincial Government Helps Alberta Farmers

Agriculture is still our leading industry. It is important that everything possible should be done to improve our agricultural products and to make farm life more pleasant. The Provincial Department of Agriculture serves the needs of Alberta farmers through a number of branches, each looking after a special part of the farming industry.

1. The Field Crops' Branch tries to help the farmers grow better crops. This branch experiments with different kinds of seed, methods of destroying weeds and pests, and ways of improving the soil. Junior Grain Clubs where boys and girls are able to learn good farming methods are operated by this branch.
2. The Live Stock Branch tries to improve Alberta's herds and flocks. Junior Stock Clubs are organized. Methods of fighting disease are studied by experts. Stock inspection is carried out regularly.
3. The Dairy Branch inspects dairy farms, dairies, creameries and cheese factories. A cow testing service by which farmers may have their cows tested for disease is carried on.
4. The Poultry Branch operates to improve the quality of poultry produced in Alberta. Tests are carried on to see that disease does not spread amongst the poultry. Rules for grading eggs are made by this branch.
5. The Apiculture Branch assists the beekeepers of the province.
6. District Agriculturalists help the people of the farming districts with their problems. They travel about giving expert advice to farmers.
7. District Home Economists help the women on the farms make better homes. They, too, travel from place to place holding conferences with farm women.

8. The Horticultural Station at Brooks is used to develop good varieties of shrubs and fruits for the people of the province.



LUNCH TIME!

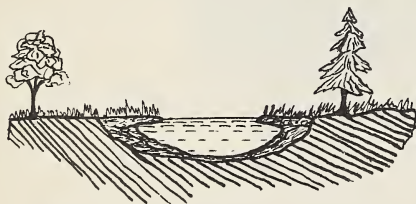
CHAPTER V: MINERAL WEALTH - TREASURES IN THE EARTH

We have all, at some time or another, gone on a treasure hunt. Perhaps the hidden treasure was buried in the earth and how we had to search to find it! We happen to live in a land where nature has chosen to hide some of her greatest wealth. It is up to us to find it. Fortunately nature has been kind enough to leave clues to lead us step by step to her treasures. Coal is one of nature's greatest gifts.

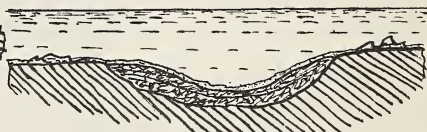
Formation of Coal

We already know that our great prairies did not always blend into our parklands, nor did they gradually rise into the foothills and mountains in the west. Once, long, long ago, great seas covered our country, our climate was much different than it is now, and many strange beasts made our land their home.

HOW COAL WAS FORMED



Many trees and water plants
grew around lakes and in
swampy ground.



The land began to sink and
the sea came in.



Great weight on the dead
trees began to form them
into coal.



The land rose again. Seams
of coal were formed. The
coal seams were bent when
the earth heaved.

It was back in these ancient times that nature began manufacturing our coal. Tropical forests covered our land. In and around the lakes grew many water plants. These died and fell into the water and swampy land, the land began sinking, and soil was washed in by the many rivers and streams, to cover this dead vegetation. Then the sea came in. The plants were sealed off from the air and did not completely decay. For some reason the land began to rise again and more plants started to grow. These, in turn, died and fell into the swamps. Again they were buried with the sand and clay the streams washed in. For thousands of years the process went on. Layer after layer of vegetable matter was buried in the earth. The sand was pressed into sandstone and the clay into shale. The weight on the lower layers of vegetable matter became very great.

Down below the layers of plants great heat was being developed. Pressure and heat together forced the water out of the plants and left a deposit of peat (partly formed coal). More heat and more pressure was applied to this coal and many of its gases were driven off, leaving it much harder. Today we sometimes see the print of a leaf or the shell of a fish pressed upon pieces of coal. This was taking place away back in the days of dinosaurs. In the swampy parts of Alberta where nature did not finish her job we are able to find partly formed coal or peat.

Kinds of Coal

The kind of coal produced in a certain district depends upon the length of time nature has been working on the process and the weight above the seam or layer of coal. As a rule the deeper you dig the better the quality of the coal.

Lignite

This type of coal is found quite near the surface of the ground. It is soft, but useful for heating our homes. Because it is used in the home it is often called "Domestic Coal".

Bituminous

This is a harder type of coal and has been pressed to a greater extent than has the lignite. It is usually found in seams deeper down in the earth. There is much bituminous coal in Alberta.

Anthracite

This is the hardest type of coal we have. It was buried a very long time ago and has been very tightly pressed. It is found in places where the earth has heaved and twisted as mountains have risen. Not only has it been pressed from above - it has also received pressure from the sides as the mountains have risen. This is the oldest type of coal we have. It was laid down before our Rocky Mountains were formed and was brought nearer the surface when the great heavings of the earth took place.

The Autobiography of a Piece of Coal

I am a piece of coal. Long, long ago I was part of a huge tree in whose shade great monsters once slept. That was in the days when our country was very very warm. Finally the tree of which I was a part died and fell into some swampy ground. Grasses

and weeds soon covered me up. Then the ground began to sink, soil was washed in and was pressed into the earth. The sea came in and covered me with a great weight of water sand and clay. It was stuffy down in the earth.

The next thing I remember the earth began to rise and I expected to get my freedom, but I was disappointed. More trees and water plants fell above me, more sand and clay came in, and I found myself trapped under greater and greater weight. This went on several times and I found that I was pressed deeply into the earth. The great weight of the material above me made life very uncomfortable and hot. By this time I was very much smaller than I had been when I first fell into the swamp. I was becoming harder and harder, and blacker and blacker. So life went on. Years and years passed by.

One day I heard some rumblings away down below me. Soon great heavings were going on. Heat inside the earth was causing it to bulge here and there and from the Rocky Mountains. I was pressed harder and harder. Then life went on as before for a few more thousands of years.

Not so long ago a grinding sound reached my ears. I listened carefully and discovered that someone was boring a hole near me. He filled the hole with some powder lit the fuse and ran. There was a terrible explosion and I was blasted out of my home. I, with several of my neighbors, fell to the floor of a little room. Life, since then has been very different for me.

A busy man picked me up and placed me in a little car. I was hauled away in the car to a little platform and quickly hoisted up the mine shaft into the daylight which I had not seen for thousands of years. Just when I was beginning to enjoy some fresh air I was dumped out of the car on to some sloping screens. Fortunately I was too large to fall through the screens. Some of my neighbors fell through, they tell me, to become stove or peanut coal. Finally I bounced off the last screen into a truck. I am known as a lump coal because I was too large to fall through the screens.

I wonder what will happen to me next.

Glimpses into Alberta's Coal Mines



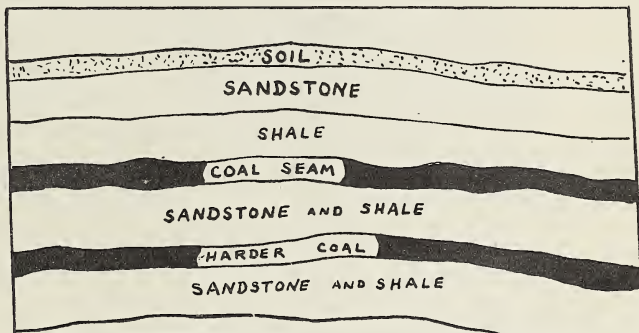
A SURFACE MINE

In many parts of Alberta coal is very near the surface. This kind of coal is usually "young" and "soft". It has not had a great weight of rock and soil above it. It is mined by simply scraping off the surface soil, digging the coal out with picks and shovels, and loading it on wagons or trucks. The scraping job is often done with a team of horses hitched to a small hand operated scraper. Neighboring farmers are the best customers for this type of coal. True, it is not of very good quality, but it is not expensive and is often found near the farmer's own home. Willow Creek, near Drumheller, supplied the needs of many farmers of the district during the "hard times" of a few years ago.



A HILLSIDE MINE

Along the banks of our rivers and coulees, coal seams may be seen. The water has washed away the soil, exposing these seams to view. Miners have dug into the sides of the hills and have removed the coal from the seams. Some of these mines extend in for some distance and the coal is often of a fairly good quality. In the Crowsnest Pass there are quite a number of mines whose entrances are on the side of a hill or mountain.



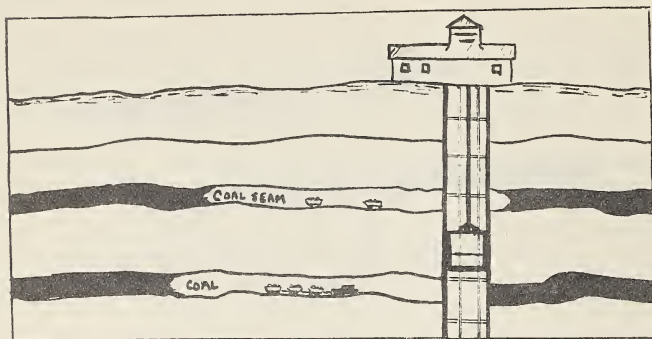
COAL SEAM UNDER THE GROUND

The most common type of mine is the one in which a shaft is sunk down from the surface of the ground. It is something like a well. As it gets deeper and deeper it cuts through more layers or seams of coal. There are ten seams in the Drumheller Coal fields. The deepest seams contain the best coal. Miners remove the coal from the seams and in its place leave large timbers to hold up the roof of the mine. The coal is then hoisted up the shaft to the surface.

Down Into the Mine

Shall we take a trip down an Alberta Coal Mine? It will be an interesting exper-

ience but we must be careful to obey the instructions of the mine operators.



UNDERGROUND MINE

In a large shed at the head of the mine we prepare for our trip. The first thing we do is remove from our pockets any matches we might have (matches have a habit of lighting when they shouldn't). We do not want to cause a fire or explosion in the mine. Next, we put on a safety helmet to protect our heads from falling rock or coal. To the helmet is attached an electric lamp operated from a battery which we carry on our belt. Now we are ready!

A cage or elevator takes us quickly down the shaft and we soon find ourselves in a large hall lighted by electricity. No, it's not a railway station, but here is a train or "trip". We climb aboard one of the many little cars and in a moment we're off on a trip through the mine. As we travel along we notice that the walls and roof of the mine are supported by large beams. These beams take the place of the coal seam that has been removed.

When our train stops we decide to follow one of the smaller passages leading from the main passage. Here we need our electric lamps. Don't forget to duck under some of these beams!

At last we arrive at a little room where a man is busy cutting grooves in the coal with a large electric machine. Another man drills holes in the coal with a power drill. The holes are filled with liquid carbon dioxide. This changes to a gas when it gets warm. Gases take up more room than liquids do, so the pressure loosens the large chunks of coal on the grooves that have been cut. They either fall out of place or can be easily removed by the miner. This is much safer and cleaner than the old method of filling the holes with powder and blasting out the coal. Some mines still use the old method.

An electric loader places the coal on small cars. These cars are pulled by small electric locomotive out to the main line where they are attached to a larger train and hauled back to the cage. We shall travel with the cars up to the surface where they enter a building called the "tippie". Here they are dumped and the coal weighed and

credited to the miner whose number appears on the car.

The coal passes over a table where men remove most of the rock that is mixed with it. It is then carried by a belt to a number of screens. The screens are of different sizes and as the coal is shaken over them the smaller pieces go through the small screens, the larger pieces through the large screens and the lumps pass on as lump coal. The various kinds of coal are now ready for shipment by train or truck.



A COAL MINER AT WORK

--N. F. B. Photo

Alberta's Coal Fields

Discovery

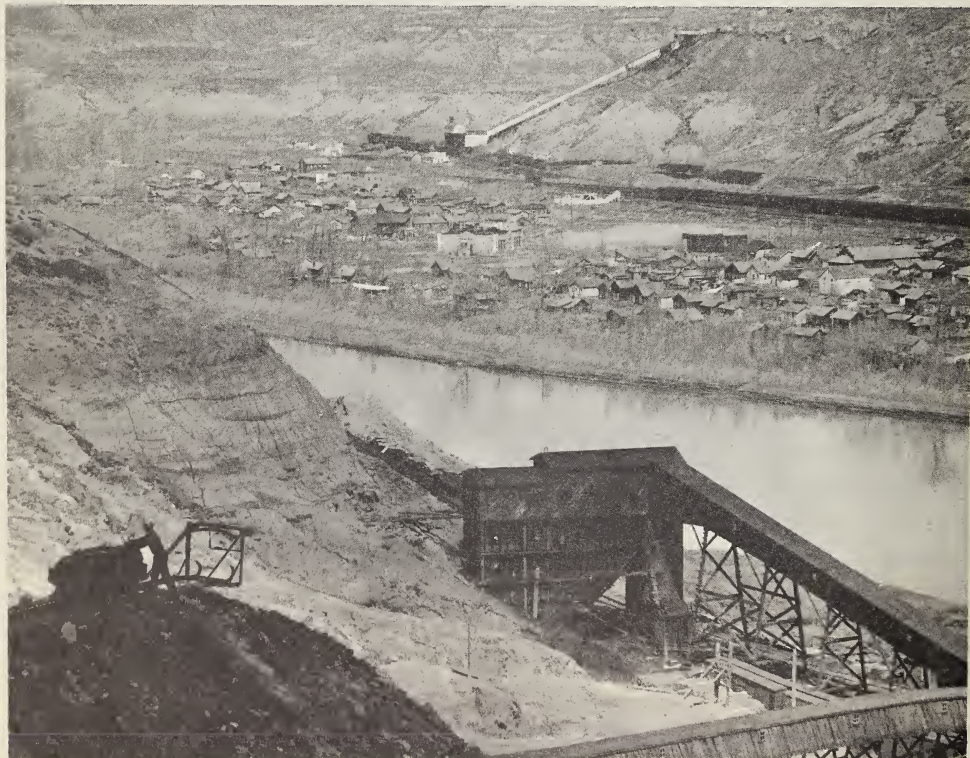
Long before Alberta became a province, Peter Fidler discovered coal along the Peace River near Drumheller. This was in the year 1791. Two years later Alexander Mackenzie wrote about a burning river bank somewhere in the Northern part of our country. Several other explorers mentioned seeing coal during the next 80 years.

However, Nicholas Sheran, opened the first coal mine in Alberta. It was on the banks of the Old Man River, near Lethbridge. The coal from his mine was hauled across the border to Fort Benton in Montana by ox train. Lethbridge early became known as "Coal Banks". Coal from this area was soon used in the locomotives of the C.P.R. when the railway crossed the Prairies.

Coal Mining in Alberta increased year by year until now we have mines in many centres throughout our province. If we could find a market for more of our coal its production would be much greater. Coal is very costly to transport so its market is limited to our close neighbors.

Coal Mining Districts in Alberta

Bituminous Coal is produced at Coleman, Blairmore, Frank and Hillcrest in the Crowsnest Pass; at Canmore, Saunders' Creek, Pincher Creek, Coalspur, Prairie Creek and Pekisko.



THE DRUMHELLER VALLEY SHOWING MINES

--N. F. B. Photo

Lignite or Domestic Coal is produced at Lethbridge, Drumheller and Edmonton.

The best quality of coal is found just east of Banff, Sheep Creek in the South and Smoky River in the North. Besides these deposits there are dozens of other areas in Alberta where coal is produced. Almost anywhere in Alberta there is a wealth of coal to be found just below the surface of the ground.

Health and Safety in our Mines

If proper care is not taken the life of the miner is a very dangerous one indeed. Fortunately in Alberta, both the mine operators and the Provincial Government do their best to make the life of the miners safe, healthful and pleasant.

We already know that care is taken not to light a fire in the mine. There are ten gases in mines which will explode when a fire is placed near them. All lighting equipment must be electric or of a kind that will not cause explosions.

At the head of the mine large fans operate to suck out the impure air and replace it with fresh air from the surface. Our mines are really air-conditioned. It is against the law for miners to stay below ground for more than eight hours a day, so you see miners get as much fresh air as does the average office or factory worker. Even the ponies that pull the "trips" in some of our mines go above ground in the summer when the mine is not operating at its full capacity. They enjoy their summer holidays in the fresh air and sunshine.

Cleanliness is very important and miners probably take more baths than any other group of people. They change to their work clothes when they come to the mine and when they come off duty they have a shower and change again into their evening clothes. The mines are equipped with good wash houses. Miners do not believe that coal is dirty - it is "just black".

The mine operators hire expert miners to check the danger spots before the men go "on shift". The Government sends inspectors around quite often to make sure that the mines all practise "Safety First".

The life of the miner now is much more pleasant than it was a hundred years ago! There were none of our modern devices for safety and comfort in the mines. Hours of labor were very long, often from twelve to sixteen hours a day. Children were shorter than adults so they could stand up in many of the spots in the mines where there was not enough headroom for adults. The mine operators liked to employ children in their mines because they could do the work quite well and did not require as high wages as men did. The hours of labor for children were often as much as twelve hours a day. We know that boys and girls must have fresh air and sunshine. Long hours in mines would break down their health. All this was gradually changed until now children cannot be employed in mines. Adults cannot work more than eight hour shifts.

The Frank Slide

The mining town of Frank, in the Crownsnest Pass is the scene of a great disaster. At 4 a.m., April 29th, 1903 more than seventy million tons of rock came crashing down the side of Turtle Mountain. As it fell, it knocked off other rocks from the mountain.

side. At the foot of the mountain a valley over two miles wide was covered with rock and dirt to a depth of seventy-five to one hundred fifty feet. Large boulders rolled five hundred feet up the mountain on the other side of the valley. The falling rock changed the course of the river.

Directly in the path of the slide was the entrance to the mine, and around it the homes of several miners. The homes were buried, and the entrance to the mine blocked. Sixty-six people lost their lives, many of them still lie buried where the slide fell upon them.

At the time of the slide seventeen miners were "on shift" in the mine. They did not know about the slide but when they tried to leave the mine they found the entrance blocked. Rather than wait to be rescued, these seventeen men tunnelled their way upward meeting their rescuers twelve hours later. It was a miracle that the gangways of the mine did not collapse.

The engineer of a switch engine that was working at the foot of the mountain saw the slide coming, and putting on steam rushed across the bridge. The trainmen clung to the sides of the box cars. No sooner were they across than the tumbling mass of rock and earth swept the bridge into the creek. Thankful to be saved, yet thinking of others, the trainmen remembered that the Spokane Flyer was due. They must warn the engineer.

A brakeman climbed back over the trembling mountain side, never knowing when another slide might come. He finally flagged the approaching train before it reached the spot from which the track had been swept away. The passengers of the train bought this hero a gold watch, and the railway company promised him a position for life.

Among those who lived through the slide was a baby girl whose parents and brothers and sisters were all killed. She was found on a pile of rock a few feet from her home. How she escaped will never be known.

Frank is still a mining town. It has been moved a short distance east of the scene of the slide. Great boulders still cover the little valley between the mountains. You may see it if you drive through the Crowsnest Pass.

Salt

Have you ever looked on your Mother's salt package? If you have you have probably noticed the word "McMurray" printed on the label. Salt, then, is another of Alberta's products and a very important one.

Salt was first discovered in Northern Alberta by traders of the Hudson's Bay Company in the northern part of the province. Salty springs bubbled up through the earth and near the springs were beds of salt. For many years people of the north supplied their needs for salt from the springs.

Salt beds were discovered in this area when oil men were drilling. The salt beds are only about 700 feet from the surface and are about 200 feet thick. They must have been laid down when great seas covered our province. The salt in this district is believed to be enough to supply all the people of Canada with salt for about sixty years.

The salt plant at McMurray has recently been expanded and has very modern machinery.

ery for turning out the best quality of salt. To remove the salt from the well, water put down the hole to dissolve the salt and both water and salt are pumped to the surface as brine. The salt is removed from the brine by the use of vacuum pans.



"Alberta Government Photograph"

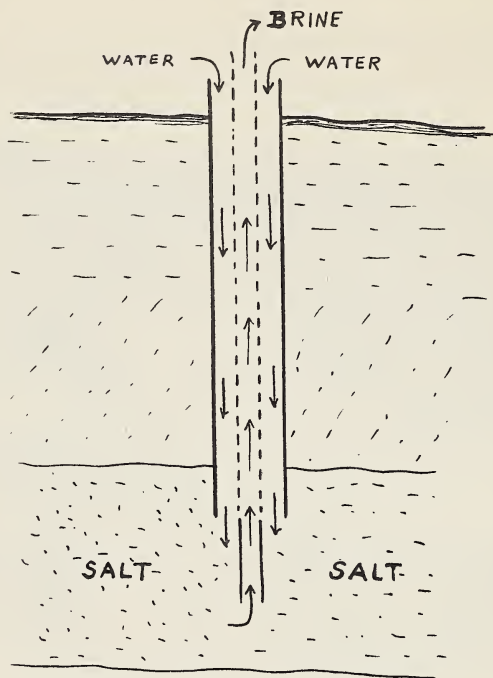
SALT MINE AT LINDBERGH

There are three main ways of packing salt. The first is in small packages for use in our homes. The second is in large fifty pound blocks for the use of farmers in supplying the needs of their cattle. The blocks are usually left where the cattle can find them and lick away at them as long as they wish. The third is in large sacks for use in industry such as freezing ice cream or removing the ice from street car tracks. It is also a good material to mix with clay and gravel for road building.

Salt from Alberta may be either pure or iodized. Iodized salt has potassium iodide added to make it a protection against certain diseases.

Recently, in the search for oil in our province, drillers discovered salt beds several hundred feet thick at Lindbergh. A company was organized to produce salt in this district and here again the most modern methods of removing the salt from the wells are being used. This is a very good location for the industry as it is on the river where

water can be easily obtained, where natural gas is plentiful, and a railway is close at hand to transport the salt to its markets. It should not be long before this and other areas in Alberta are producing large quantities of salt.



A SALT MINE

Clay Products

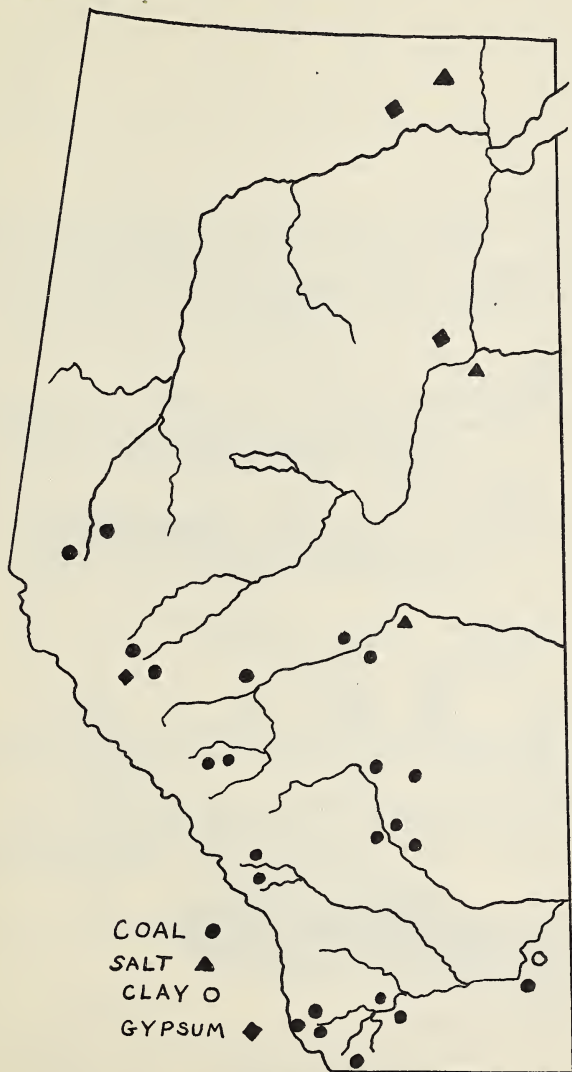
One of the most important natural resources is clay. Medicine Hat and the neighboring town of Redcliffe have been the centre of the clay industry in Alberta for over 40 years. Bricks, tile, sewer pipe, linings for chimneys, dishes, vases, tea pots, crocks, and glass are some of the products made in this part of Alberta. Clay is found right on the spot and natural gas comes from wells located under the very doorstep of the factories.

Gypsum

When the great seas that covered our province dried up the remains of shell fish were left scattered over the surface. Some of these deposits contained quantities of gypsum. Gypsum is the material from which Plaster of Paris is made. This is used in

clustering our homes, in the manufacture of paint and in making casts for broken bones.

Near Fort Vermilion and Peace Point there are several miles of these deposits, in some places the beds are as much as fifty feet thick. At McMurray and in Jasper Park other deposits are found.

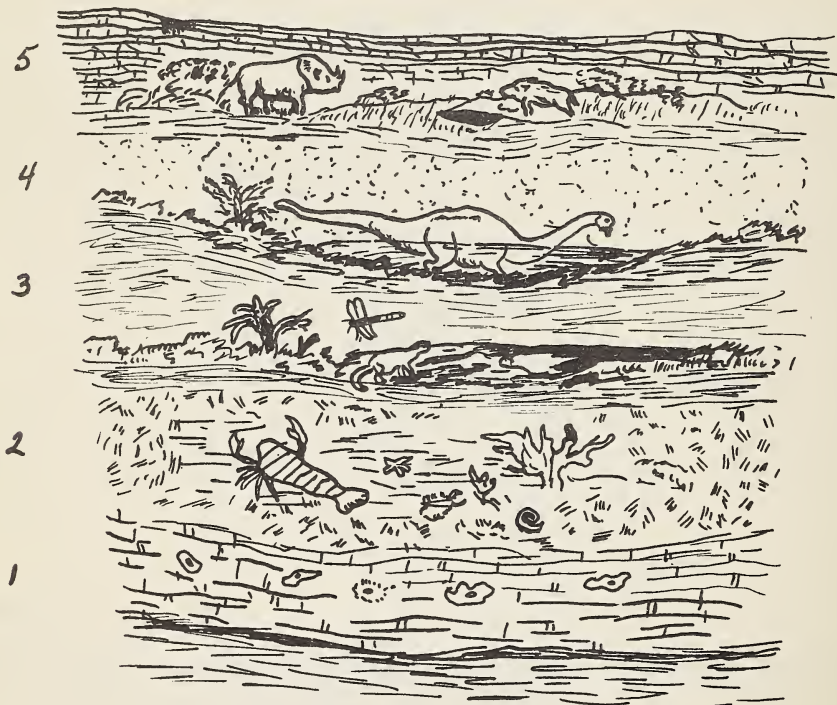


MINERALS OF ALBERTA

CHAPTER VI: OIL - WEALTH UNTOLD

How Our Oil Was Formed

We already know that our western prairies were not always plains, and our Rock Mountains did not always stand by their side. Our earth has been changing very very slowly, for millions of years. Great seas once covered our lands, and in these live millions of tiny sea creatures. They lived their brief lives and fell to the sea bottom to become mixed with the silt that was washed down by the rivers and streams. This was long before the days of the dinosaurs.



5. The Age of Man and Animals

4. The Age of Reptiles (Dinosaurs)

3. The Age of Insects

2. The Age of Fish and Water Animals)) The materials
1. The Age of Shell Fish and Sea Weeds.)) from which oil
was made.

As the years went by, these creatures were crushed under greater and greater loads of silt, rock and water. The land rose and fell, the seas disappeared and returned. All the time the pressure became greater and greater on the bodies of the tiny creatures. Thus it was, that after countless ages, this great weight and the heat used by it, turned the silt into rock, and the sea creatures into petroleum or "rock oil". Oil was made and stored deep down in the earth awaiting discovery by man.

Where Oil is Hidden

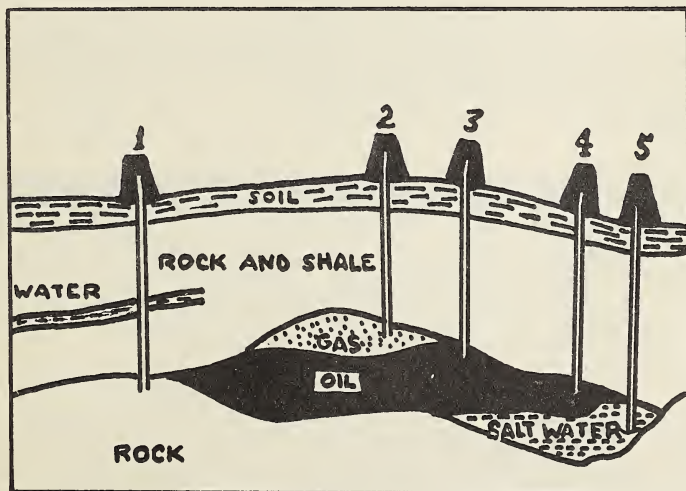
Oil travels through rocks in much the same way as ink comes up through a blotter. It seeps upwards through the tiny holes in the rocks. At times it is seen on the surface of the ground. This, however, is not a good clue to the best place to drill - the oil may have travelled miles.

Nature has been very careful to preserve great quantities of oil under the ground. This is sealed away in great rock traps something like upside-down saucers. These may be a few thousand feet, or as much as two or three miles below the surface of the earth. In these traps we usually find gas, oil, and salt water. The gas is lightest, and it floats on the oil which floats on the salt water.

In drilling for oil there are four kinds of holes.

1. The Dry Hole

In this hole the driller misses the oil formation. His drilling is useless and a waste of money.



Kinds of Wells

1. Dry Hole 2. Gas Well 3. Oil Well 4. Oil Well 5. Salt Water

2. The Gas Hole

The hole reaches the natural gas on the surface of the oil. This gas escapes and unless it is needed for fuel or lighting, it is of little value. It lessens the pressure on the surrounding oil supplies, and is not good for the oil field. Natural gas is used as fuel in our cities and towns.

3. The Salt Water Hole

The driller of this type of hole has struck salt water instead of oil.

4. The Oil Well

This type of hole has reached the oil reservoir. The pressure of the gas on the surface of the oil forces the oil up the hole. The driller who finds this type of hole has a good reason to be happy.

Searching for Oil

The oil seeker is now a common sight in Alberta. You see him travelling by canoe, by truck or jeep, by pack horse, on foot, or in the air. There is scarcely a section of our province that he has not visited. These 'oil detectives' use many kinds of instruments - some so small that they can measure the force of the footsteps of an ant - some are huge drilling rigs pulled by powerful trucks or tractors. Each group of men in the search for oil has a special job to perform.

1. The Aerial Surveyor

This man flies over an area in which oil is suspected. He is experienced and is able to tell whether or not oil is likely to be found in the area. He gets the "lay of the land", and decides which are the most likely spots.

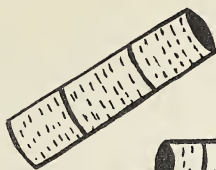
2. The Field Geologist

This is the man who reads nature's story in the layers of rock laid down in ages past. He follows the deep canyons and gullies carved by glaciers and streams, and observes the out-cropping rock formations. In the rocks he finds the shells and bones of creatures that lived here ages ago. Then, too, he is very interested in finding those upside-down saucer-like formations that trap oil. In his office he studies maps and aerial photographs and tries to understand the structure of the earth. After months of study in his office, and in the wilderness he puts all his clues together and tries to decide which spots would be the best for drilling.

3. The Core Driller

This man uses a portable drilling rig mounted on a truck. He sets up his machine in the spots the field geologist suggests, and begins drilling. When he has drilled as far as the sediments below the surface of the earth he uses a special drill. This drill is hollow in the centre, and with it he brings cores of rock to the surface. The material that is brought to the surface is carefully studied for evidences of oil. "Bug Pickers" wash the fossils out of the mud, dry them, and examine them carefully to see if they are the kind you would expect to find in an oil producing area. The "cute numbers"

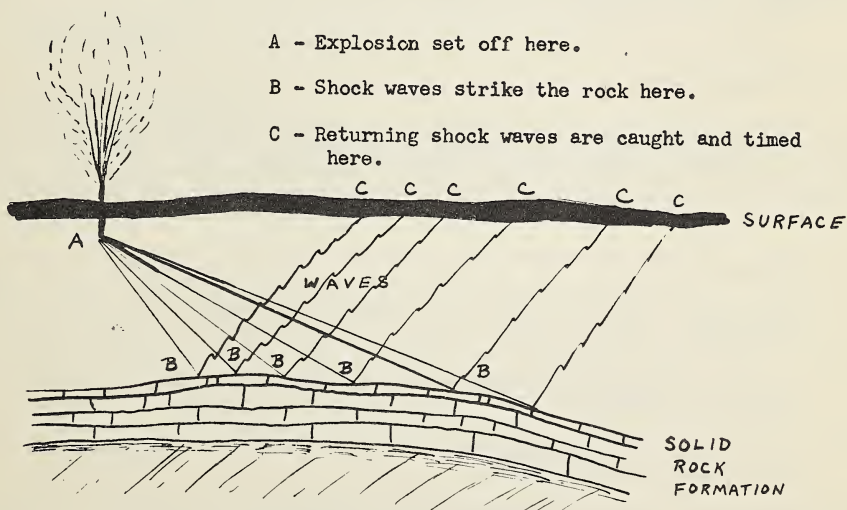
They usually name after their girl friends, and the ugly ones they name after the boss.



ROCK CORES

The Earthquake Man (The Seismologist)

This man has a very thrilling job. He drills a hole, places dynamite in it, and sets off an explosion, or miniature earthquake. Shock waves go out from the explosion and strike the rock formations. They bounce back to the surface where they are measured with the instrument that is so sensitive that it can measure an ant's footsteps. The length of time it takes for the shock to return to the surface tells how deep the solid rock is below the surface. When several such explosions are set off, the shape of the rock formation can be studied. These clues are studied along with the reports of the old geologist and the core driller.



A - Explosion set off here.

B - Shock waves strike the rock here.

C - Returning shock waves are caught and timed here.

THE SEISMOLOGIST SEARCHES FOR OIL POCKETS IN THE ROCKS BELOW THE SURFACE

5. The Driller

The driller is the man who makes the final test for oil. When the "oil detectors" have compared their clues, he comes in to find out if oil is really there. Exploration in untested country is called "wildcat drilling". Some "wildcat" wells cost million dollars and are two and a half miles deep. In the ten years before oil was struck near Leduc, one hundred and fourteen "wildcat" wells were drilled without striking a single producer.

The drill is somewhat like that used to cut through metal or wood, but many many times as large. At the end of a piece of drilling pipe the bit is fastened and turned by a huge turntable in the derrick floor. As the hole gets deeper more drilling pipe, ninety foot lengths is added. The turntable turns around and around for days, weeks and months as the hole gets steadily deeper.

The bits have to be replaced quite often, for although they are very hard, they become dull when cutting through rock. It is a difficult task to change a bit, as it must be brought to the surface. All the sections of drilling pipe must be disconnected and piled up in one corner of the derrick, only to be connected again and lowered where the bit is changed. This often has to be repeated after a few more feet of drilling. If the hole is two or three miles deep, changing the bit is not an easy job.



DRILLING BIT

6. The Mud Engineer

The mud engineer is a very important man around the drilling outfit. He is an expert, and often the success or failure of the drilling depends upon him. It is his job to supply just the right type of mud for every hole. He mixes his "muds" something like the druggist mixes his chemicals to form medicines. Mud is sold by the leading oil field supply companies.

Uses of Mud

1. Mud lubricates the bit, and keeps it from "sticking" thousands of feet below the ground.
2. Mud seals the sides of a hole, and stops water from entering from the many underground streams.
3. When the drill is passing through loose earth or rock, the mud helps to prevent the hole from caving in.
4. Mud is heavy and often holds down or seals off a "strike", preventing the well from becoming a "gusher" or a "wild well".
5. As the mud comes to the surface it carries with it many rock cuttings. These

would make drilling harder if left in the hole. The cuttings often provide interesting material for the "bug pickers", who are always looking out for something new.

Mixing the Mud

The mud engineer digs large pits called "sumps" near the derricks. In these pits he makes his "mud pies". The mud is pumped from the pits into the hollow drill pipes. It goes down the drill pipes, and through the openings in the bit. It is forced up the hole between the outside of the pipe and the inside of the hole by the pressure of more mud coming down the pipe. When the mud reaches the surface it passes over a "shale shaker" and the mud with the rocks removed goes down the hole again.

Sometimes the mud begins to escape into a very soft spot in the hole. If this happens the mud engineer quickly places articles in the mud that will swell and seal the hole. Bran, beets, corn flakes, sawdust, oats, corn starch or cell-o-phane often go into the mud to fill the cracks.

Drilling Oil

The oil man is very happy if his well becomes a "producer". This means that he has struck oil with enough pressure from natural gas to force the oil up the hole. The well that provides a small steady flow is best. The "gusher" type does not usually last very long as the gas and salt water move in around the hole faster than the oil, which is thicker, can move. As time goes on, the "gusher" produces more gas and salt water, and less oil. The government does not allow drillers to operate gushers, since it lessens the pressure of the whole field. It is sometimes necessary to seal a well.

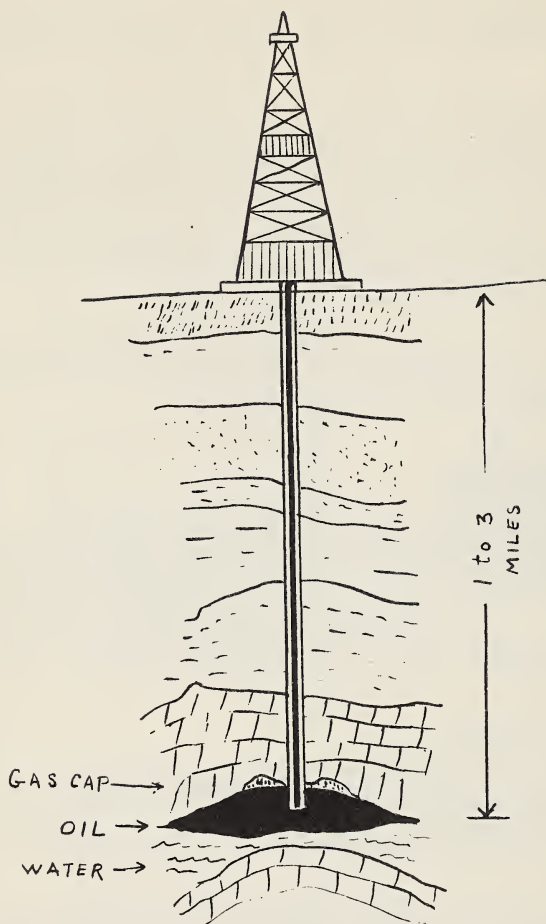
Learning the Driller's Language

Would you like to know some of the names the drillers have for their equipment and for each other? It is a language all to itself. If we were to visit a foreign country we would try to learn the language of that country. When we visit a drilling outfit, it would be well for us to know something of the driller's language.

The "tool pusher" is the man in charge of the drilling operation. He is on duty twenty-four hours a day for the whole time the well is being drilled - it may be six months or it may be two years. Of course he can 'take it easy' when things are going well, but when 'going is tough' he must be on duty night and day. He usually has three shifts of men on eight hour duty, and an extra or "swing" shift. This shift relieves the regular shifts on holidays and weekends. Once drilling begins it must go on night and day until the well is completed or the job is given up as hopeless.

The man in charge of each shift is "the driller" and the men who work under him are the "rough-necks".

"Sumps", for the "mud engineer", and a "cellar" over which the derrick is placed are dug with "bulldozers". On the floor of the derrick the turntable is placed and below the turntable and turning with it is the "kelly". Drilling pipe or "drill stem" is fastened to the "kelly". The drilling bit is attached to the other end of the drill stem.



The "lean-to" or shed on one side of the derrick contains the engines and other drilling machinery. When bits must be changed the "kelly" is lifted, unscrewed and dropped into the "rat-hole" at one side of the derrick. Then the pipe is lifted by huge engines. The "derrick man" stands on the "monkey-board", ninety feet above the ground, where he guides each section of pipe towards the "stack".

When all the pipe is "stacked" and the bit changed, it is again lowered into the hole, section by section. Each section is guided by the "pipe racker" to the turntable, where he "stabs" it into the open end of the previous pipe.

The "cathead man" twists a piece of rope around each section of pipe and screws

the pipe by pulling one end of the rope. This is known as "spinning it in". The "lead tong man" tightens each section with a huge wrench and they are ready for the next section.

An experienced group of "rough necks" can do their work very quickly and very seldom lose their "pipe".



--Courtesy of Imperial Oil

ROUGH NECK

Alberta's Oil Fields

The Turner Valley Field

An oilman's story tells us that a few years before the First Great War a Calgary man gathered a few stones together, placed a sheet of tin over the stones, struck a match and fried bacon and eggs for his astonished friends. His fuel was natural gas which was seeping up through the soil of this Turner Valley farm. Soon after this a well was drilled near Black Diamond. It produced a mixture of natural gas and gasoline. The people of Calgary expected to get rich, but it was several years before any great amount of oil was discovered. Nine wells were drilled during the next ten years, but none of them were real producers.

The year 1924 saw the opening of Royalite No. 4. It came roaring in, producing a large quantity of natural gas and naptha (gasoline). This caused another oil boom. Several more wells were drilled and a process of separating the naptha from the natural gas was developed.

Some of the natural gas was piped to Calgary for fuel. Calgary housewives objected to the vile smell until a scrubbing plant was constructed to remove the sulphur. Some of the gas was pumped into the gas wells at Bow Island which had supplied fuel for Calgary for some years. This increased the gas pressure at Bow Island where the field was getting dangerously low in gas production. The remaining gas was burned. Large flares could be seen for miles as millions of cubic feet of gas were wasted every day. The pressure in "the Valley" was getting less and less.

In the year 1936 a large flow of oil was struck on the west side of the field. This well had avoided the gas-cap and had reached the oil pool. Another boom was on. This time more care was taken to control production. All the gas-cap wells were closed in so that the pressure of the valley could be kept up. The government also placed a production quota (limit) on the amount of oil that could be produced from each well.

The Turner Valley Field is now some 20 miles long and about $1\frac{1}{2}$ miles wide. The Valley still produces a very large percentage of Alberta's oil, but it is felt that its production will get less and less. It served our country well during the war years, but in doing so its life has been shortened. We needed oil badly and took more than we should have taken.

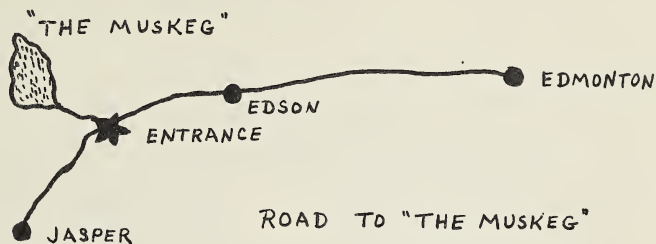
New Fields

Oilmen have, for years, been drilling here and there throughout our province hoping to find an area that would supply their needs. Hundreds of wildcat wells have been drilled in various parts of the province - some dry holes and some producers. As production in the Turner Valley field declined the search became greater. From one end of the province to the other the oil searcher has become a common sight.

"Operation Muskeg"

The little village of Entrance about 200 miles west of Edmonton, has long been the jumping off spot for big game hunters. It also had a few visitors who came for another purpose. From time to time small parties of geologists arrived. They hired saddle

panies, stocked up with provisions, and disappeared into the rugged country along the Muskeg River for weeks at a time. They found many indications of oil.



The search for a new oil field was becoming quite intense. Five of the largest oil companies decided they would carry on a thorough search for oil in the Muskeg Area. It would be an expensive task, but if they wanted oil they would have to pay for it.



--Courtesy of Imperial Oil

"OPERATION MUSKEG"

In the winter of 1945 - 46, a seismograph party arrived with their equipment. They built their own winter trail and forced their way 78 miles beyond Entrance. Some of their equipment was rather bulky as it included a small drilling outfit. As they progressed they drilled holes and set off explosions. They were very pleased with their discoveries and arrived back in Entrance just before the spring thaw would have trapped them for many months.

The companies concerned decided to follow up the venture by moving their heavy equipment into the area and drilling wells. This involved the building of an all-weather road over some of the most difficult country in the world.

In the summer of 1946 huge "cats" lumbered into Entrance dragging behind them all types of road building equipment. In record time hillsides were blasted out, streams were bridged, and muskegs were crossed by bridges made on the spot.

Drilling equipment soon arrived at Entrance. The drillers were planning to move into the Muskeg. They could not expect to come out for many months. In this time they would either discover a new oil field, or they would have to abandon their venture, leaving their road to the citizens of Entrance or to the neighboring Indians. The prospect of leaving the country dotted with expensive dry holes was not a pleasant thought. The life of the oil man is a gamble and he had to run the risk.

"Operation Muskeg" turned out to be the most expensive venture in Alberta's oil history. A well was drilled to a depth of 10,709 feet. It did not turn out to be a producer and was abandoned in October 1948 after 555 days of drilling. In the meantime the great Leduc field had been discovered.

Such is the fortune of those who drill for oil!

The Leduc Field

On February 13, 1947, Imperial Leduc No. 1 well became the Discovery Well of another great oil field. This was not a surprise to the geologists because they had made tests all the time the well was being drilled. Every test pointed to the well becoming a producer.

When the mud was removed from the hole the well "kicked off" beautifully. Another oil field was born. It was not long before the countryside was dotted with derricks. The farmers on whose land oil was discovered became rich. Leduc was a very busy town and prefabricated buildings were moved into the new townsite of Devon. During the first year forty wells were drilled - thirty-five of them were producers. The total output of oil from Leduc for the first thirteen months of its existence equalled that of Turner Valley for its first fourteen years.

The production of the first few months was hauled to Leduc by truck. Soon, however, a pipe line was constructed to the railway at Nisku about eight miles away. The field was drained by a network of pipes leading into the main pipe line. Large storage tanks and loading equipment were placed at Nisku. The need for a pipeline to Edmonton became very evident and it was not long before this work was started. The eighteen mile pipeline is now completed.



--Courtesy of Imperial Oil

IMPERIAL DISCOVERY NO. 1 WELL AT LEDUC

The Woodbend Extension

In January 1948 a well kicked off at Woodbend, across the North Saskatchewan river from the Leduc field. It is not known whether this is a new field or an extension of the Leduc field. If it is an extension of Leduc it means that the Leduc field is much larger than anyone had ever expected. If it is a new field there are great possibilities of other large oil pools. In any case the Leduc-Woodbend area is one of the greatest producers in the world.

The Trail of '48

The discovery of the Leduc Oil Field made it necessary to have a refinery at Edmonton. It was not long after the end of the war and building materials were scarce. It would take a long time to build and equip a refinery.

The Imperial Oil began searching for a good "used" refinery. They found one at Whitehorse, but it was 1350 miles away. That is a great distance to move anything as large as this. The refinery had been built during the war to supply the Americans based in Alaska with fuel from Norman Wells. When the war ended it was not needed as the American forces left the North. A bargain was made in the summer of 1947. The Imperial Oil paid the United States Government a million dollars and the refinery was theirs - if they could move it.



Experts were called in and a plan was drawn up. The refinery was to be taken apart at Whitehorse and moved over the Alaska Highway by truck to Dawson Creek, 919 miles away. At Dawson Creek it was to be shipped by rail to Edmonton.

Ten of the world's largest trucks were put into operation. They weighed almost twenty tons each and some had twenty-one forward speeds. Two skilled drivers were to take turns at driving until they reached Dawson, about 50 hours afterwards, having made only one scheduled stop for fuel. Driving these trucks was no easy job. The Alaska Highway is full of sharp curves, mountain slopes, and high bridges. A load of from 40 to 60 tons of bulky equipment was not easy to control. As winter came on, the Highway became very icy and dangerous, but still the work was carried on.

About one hundred miles south of Whitehorse there is a wooden bridge over half a mile long. The engineers were afraid that this bridge would not carry the weight of some of the heaviest equipment. They decided that they would build an ice bridge across the lake. Water was to be allowed to freeze and layer after layer of ice was to be added until the ice bridge was strong enough to carry the heaviest loads. Unfortunately the expected cold weather did not arrive and the ice bridge could not be built. Some of the heaviest loads had to be taken by rail to Skagway, Alaska, and shipped by boat to Van

ouwer and again by rail to Edmonton.



--Courtesy of Imperial Oil

THE TRAIL OF '48

At Whitehorse engineers were busy taking equipment apart. Each part was numbered, sketches were drawn and photographs were taken of the various parts of equipment. Some of the larger pieces had to be cut with blow torches and welded together again when they reached Edmonton.

The dismantling job included taking down several large towers, some weighing a-

bout 150 tons. It was not an easy job to work on top of a tower about 150 feet high, in the intense cold of the Yukon, especially on the days when an Arctic breeze was blowing. The long hours of darkness slowed up the job considerably. It was necessary to design and build special equipment to handle the large towers.

At Edmonton engineers were busy putting equipment together. Carefully they followed their photographs and blueprints and gradually the refinery began to take shape in its new home. It was officially opened on July 17, 1948.

The cost of moving the refinery was almost as much as it would have been to build a new one, but eighteen months were saved. Think of all the oil that could be refined in 18 months. This was one of the greatest engineering feats of all time. The refinery began operating long before the last piece of equipment reached Edmonton, and as more and more equipment arrived, its production became greater.

Fifty years before, in 1898, prospectors swarmed northward over this same route to the Klondike in search of gold. They travelled the Trail of '48 - in the opposite direction. Both "trails" were packed with adventure.

Redwater



REDWATER

--Courtesy of Imperial Oil

One of the newest fields is at Redwater, about 50 miles north-east of Edmonton. Drilling began in midsummer 1948, after geologists had suggested the probability of oil accumulation. It was discovered that the oil-bearing formation was 140 feet thick, about three and a half times that of the Leduc field. According to present indications, Redwater may become a very important oil field. At the present time this quiet little country village of one year ago is bustling with the activities of several drilling rigs.

The Lloydminster Field

This is one of the older fields of the province. During the last two years its production has been increased about twelve times what it had been. The black oil of this field is used for diesel fuel or for making asphalt for roads.

Other Oil Fields

Drilling has been going on in all parts of the province during recent years. Several promising new fields have been discovered, and some of the older fields have been further explored.

Several years ago the Jumping Pound area was explored for oil with little success. Recently drillers went in again and secured, besides salt water, a fairly large production of wet gas.

Away back in the 1890's it was discovered that the Indians were skimming a brown oily liquid from the surface of a slough near Pincher Creek. Two white men became interested and traded a saddle pony to the Indians for the slough. The Indians were delighted with the trade, and rode off into the hills leaving the white men in possession of the vile smelling slough. In 1901 drilling began near the slough but with little success. Now, almost fifty years later, drilling is again going on in this same area. Perhaps the Indians did not get the better of the deal!

What Lies Ahead?

The story of Alberta's oil is not yet complete. Day by day new wells are blowing in, new fields are being discovered. By the time this book is printed there may be many new fields. The last few months have seen a great expansion in the oil industry - perhaps the expansion will be as great or greater in the next few months. You must read the papers or listen to the radio to get the latest oil news. Will the Stettler field be greater than any yet discovered? Will "Golden Spike" be Alberta's number one field?

Several large companies are making plans to export oil from Alberta by pipeline. Pipelines to Vancouver, Regina or even to Port Arthur have been planned. Of course it depends on our government whether or not oil will be piped out of the province.

The Athabaska Tar Sands

Over 200 years ago the Indians of the Athabaska region used tar from the river banks for waterproofing their canoes. The sands along the Athabaska and Clearwater

Rivers are now believed to contain billions of dollars worth of oil products. From a distance of 100 miles can be seen the great cliffs of oil-soaked sand, soaring two hundred feet above the river bed. Fort McMurray seems to be the centre of this "magic sand pile" which extends sixty-five miles up the Clearwater, forty miles up the Athabaska and sixty-five miles down the Athabaska. The action of the last glacier to move over our country is perhaps responsible for this great deposit of oil. Some scientists say that there is enough oil here to supply all the petroleum needs of the world for 100 years. Perhaps this is true - in any case the supply is very great.



Extracting the oil from the sands is a very difficult task. No matter how careful man has been he has not been very successful in refining this oil. The expense is great and as long as it is possible to secure oil by drilling for it, it does not seem worth while to spend huge sums of money in the refining process.

The Dominion and Provincial Governments have been helping two companies at McMurray, but so far they have not had much success. The expense is too great for the returns. The Alberta Government is building an experimental station in the area and perhaps some day a better method of refining will be discovered. Our Government feels that the sand should not be used until nearly all the oil can be taken from them. It is wasteful to leave large quantities of oil in the sand.

Natural Gas

Closely linked with oil production is the production of natural gas. It heats our homes and keeps our factories operating. Almost anywhere in Alberta natural gas is present. There are now three main gas fields and several of lesser importance. In many places Alberta farmers drilling for water have obtained gas which they use in heating their homes.

Medicine Hat - Redcliff

In 1885 gas was first discovered by the C.P.R. while drilling for water. Medicine Hat was fortunate in having its gas right under its own doorstep. Many industries have been attracted to this city of "cheap fuel". So plentiful was the gas that it was used for lighting as well as for heating. The street lights of Medicine Hat were never turned off for years.

Turner Valley

The City of Calgary receives its supply of gas by pipeline from Turner Valley. Many of the towns and villages of the district are also supplied from "the Valley".

Viking-Kinsella

The gas from this field is piped to Edmonton, about 80 miles away. The field was discovered during the First Great War, and since that time has supplied our Capital City with fuel. The service has been extended south to Red Deer and south-east to Camrose, as well as to the towns along the way.



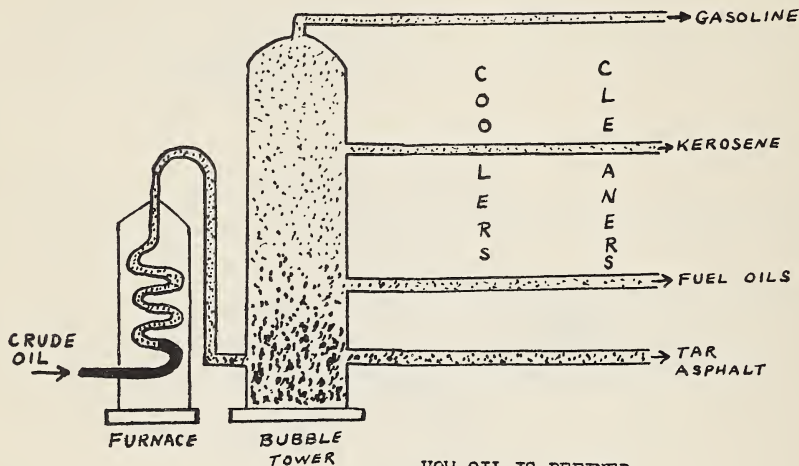
Refining Oil

Oil, as it comes from the well, is not suited to the use of man. It must be changed into a number of oil products. This process is called "distillation".

Crude oil, or petroleum is passed through coiled pipes, inside a roaring furn-

ace. The pipes may be as much as half a mile in length. The great heat changes the oil to a vapor or gas as it leaves the furnace.

The second step takes place in the bubble tower. Here the heavier products sink to the bottom and the lighter ones bubble to the top. The towers are often about one hundred feet high. Pipes lead each of the petroleum products through a cooler and clearer. Gasoline, kerosene, fuel oils, tar, and asphalt are the main products. Some of these are again broken down into more products.



HOW OIL IS REFINED

Cracking

Cracking is a method of getting extra gasoline from the heavier oil at the bottom of the bubble tower. This process was discovered when a careless worker left his equipment unattended. The heat became very great and cracking was discovered. Millions of dollars are now spent on cracking.

Petroleum Products

There are over six hundred petroleum products. Of course these are not all at present obtained from the oil fields of Alberta. Each year, as our oil industry develops more and more of these products are made.

Our oil wells supply gasoline for our cars, kerosene (coal oil) for our lamps, diesel fuel for our engines, distillate for our tractors, fuel oil for our factories, lubricating oil to keep our wheels running smoothly, and asphalt for our roads. Candles and candy, face cream and floor polish, chewing gum and cardboard are a few of the lesser products of the petroleum industry.

CHAPTER VII: INDUSTRIES OF ALBERTA

Agriculture has for years been the leading industry of the province. Our farms and ranches are known all over the world. Our coal production is first in Canada, and we have not even touched many large coal resources. The oil industry of Canada is centred in Alberta and is becoming more important every day. Alberta contains more oil-soaked sands along the Athabaska River than are contained in any other part of the world. These are the industries we have already discussed. Let us look at some of our other industries.

Lumbering

On a map of Alberta draw a line straight north from the Crowsnest Pass and another straight west from Cold Lake on the Saskatchewan border. You have marked off Alberta's forest areas which lie west and north of these lines. Of course there are patches of parkland included in this section, but for the most part it is bush. More than three quarters of Alberta is either forested or dotted with clumps of trees. The chief trees in the forested areas are jack pine, white spruce, tamarack, birch, lodgepole pine, black spruce and poplar. These are the varieties that find their way to the seven hundred sawmills which operate in Alberta. One half of the sawmills are portable and can be moved from place to place.

Farmers living in the parklands are fortunate in having trees in the bluffs which make good fence posts, and poles for building. Some of these trees are even large enough to make into boards. Of course the farmers who have clumps of trees on their land never need want for fuel.

Forest Reserves

We have discovered how important our forests are to every person in Alberta. The Forestry Branch of our Provincial Government has set aside large forest reserves where the forest covering of our land is protected. If our forests are wisely protected we need never fear that we will use them all up. If the trees to be cut are carefully chosen no harm will be done to the forest. Younger trees are always growing and if they are given a chance they will grow to take the place of those that are cut down. Perhaps you have wondered why you are not allowed to go out and cut yourself a lovely little Christmas tree from one of our reserves. Men who know how to look after our forests will tell you that the little tree you want will one day grow to be a great tree whose lumber will help build a house.

Our Government has set aside the following forest reserves: The Northern Alberta Forest District, the Crowsnest - Bow River Forest Reserve, the Clearwater Forest Reserve, the Brazeau-Athabaska Forest Reserve, and the Cypress hills Forest Reserve. Try to find them on a map of Alberta.

Forest reserves are set aside to protect our timber resources, to be a home for wild life, and to maintain a good water supply on the prairies. Our great mountain parks are included in forest reserves. Permits are given to farmers to cut posts and fuel in the reserves. Lumbermen are also allowed to cut down trees from the forests, but they

are carefully supervised. They must not leave stumps over eighteen inches high, - that would be wasteful. In cutting the trees they must take special care not to let the falling tree damage the smaller trees. Enough young trees must be left to allow the forest to continue its growth. Trees grow better when they are not too crowded, so it is sometimes best to remove some of them.

We have mentioned the people who cut down trees wherever and whenever they wish. They are great enemies of the forests, but there is one enemy that is even greater. It is fire.

Fires may be caused in a number of ways. Lightning sometimes strikes trees and sets them on fire. We cannot prevent this, so we must be prepared to fight the fire when it breaks out. Sparks from trains sometimes set our forests on fire. The railway companies help fight fires caused in this way and railway section men take it as part of their jobs to watch for fires.

Carelessness is the greatest cause of forest fires. A burning match tossed out a car window, a camp fire left smouldering, or even a fire cracker may start a fire which will cause thousands, perhaps millions of dollars worth of damage to our forests and wild life. Each boy and each girl in Alberta should be a self-appointed fire ranger and help protect our forests.

A group of men known as forest rangers are employed by the Forestry Branch. It is their duty to go out to their lonely cabins in the forest reserves and watch for fires. If the fire is small they can put it out. Large fires will require extra help. The ranger telephones for more men and supplies and perhaps for weeks the fight will go on.

The lonely rangers from their look-out points, high up the mountain side, are very important men. The people of Alberta owe a great deal to these men, who day and night, guard our forests from their great enemy, fire.

Tree Planting in Alberta

Our Forestry Branch has found it worth while to replant some parts of our forests. In areas where trees are cut down it is often a good plan to start other trees growing. It will be a long time before they will make lumber, but Albertans who live here years from now will be thankful that these trees have been started.

The Forestry Division also supplies trees to rural areas. Good trees not only add beauty to the farm, but they act as windbreaks. Trees will help stop drifting soil and store up a water supply for the farmer or market gardener. Each year hundreds of thousands of small trees and cuttings go out free of charge to the people of Alberta.

Fishing

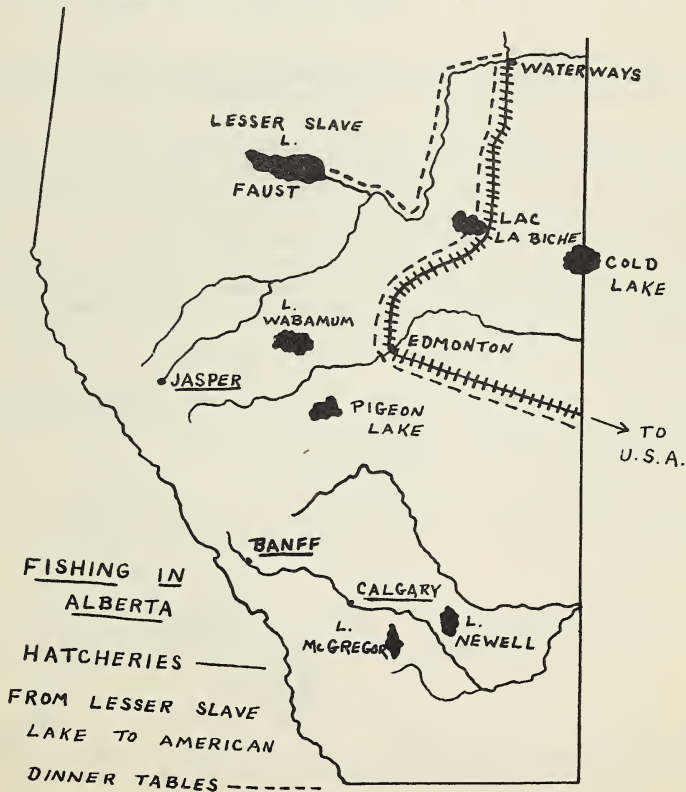
Almost one million dollars worth of fish are taken yearly from the lakes of Alberta. More than half of this fish finds itself on the tables of Americans in such cities as New York and Chicago.

Central and Northern Alberta contain our main fishing lakes. Lesser Slave Lake,

Cold Lake, Wabamun Lake, Pigeon Lake and Lac la Biche are all important. Lake trout is the most plentiful fish, especially in Cold Lake. Whitefish, pike, pickerel and tullibie are also numerous. Faust, on Lesser Slave Lake, is an important fishing centre. The fish are taken across the lake and down the Athabaska River to Waterways. At Waterways they are put on fast trains and rushed to market, in refrigerator cars.

Fishing is done for three reasons. The first is to supply food for the local markets. The settlers and Indians of Central and Northern Alberta use a large quantity of fish for their own food and for the food of their dogs in winter. Frozen fish are carried along as a food supply on dog trains. The second reason for fishing is to sell the catch and earn money. The third reason is for sport and pleasure. Each year thousands of sportsmen spend long hours casting their lines and trying their luck in Alberta's lakes and rivers.

It is important that we do not "fish out" our lakes and streams. The Provincial Government has Fish Hatcheries at Banff and Jasper. Here millions of tiny fish (they are called fry) are raised from fish eggs. They are taken from the hatcheries and placed in lakes. Some have even been placed in the irrigation lakes. The Calgary Brewing and Malting Company has a large private fish hatchery. Many fry from here are put into Alberta lakes.



The Fur Trade

The fur trade opened up the west and brought white people to Alberta. We know the story of the past. Let us look at the fur trader of today. The north-west is still inhabited by such animals as muskrat, fox, marten, weasel, beaver, squirrel and lynx. Hudson's Bay Trading Posts still exist in northern Alberta. Many people earn a good living on the trap-line. Of course trappers are going modern. Instead of the long hard trip by canoe to the trading post, a trip requiring only a few hours by air now does the job. Edmonton is still the centre to which the fur traders bring their pelts.

Would you like to be a fur trader? You do not have to go many miles from the city or town to become a fur trader these days. In our suburbs we find a large number of fur farms. There are over twelve hundred of these fur farms in Alberta. The value of the pelts produced in the province is over twelve million dollars a year. Silver fox, black fox, mink or muskrat, all make their homes on Alberta fur farms. Once upon a time Mother's fur coat came from an Indian's trap-line hundreds of miles away from the nearest city. Today fur coats come from the mink or muskrat that lives down the street.

Water Power

Alberta has many swift rivers which could be used for developing water power. Only a small part of our water power is at present developed.

The Calgary Power Company is by far the largest power company operating in the province. Its power lines extend from the United States boundary to a point fifty miles north of Edmonton and from the Saskatchewan border to the Brazeau Coal Fields. It has 3500 miles of transmission lines. Besides serving five Alberta cities the Company supplies electricity to hundreds of smaller centres and farms.

The Bow River Basin, west of Calgary, contains five electrical plants and two reservoirs. The Horseshoe Falls Plant, fifty miles west of Calgary was completed in 1911; the Kananaskis Falls Plant was completed a year later; the Ghost River Plant in 1929; the Cascade Plant, five miles east of Banff in 1942; and the Barrier Plant on the Kananaskis River was finished in 1947. A large supply of water is stored at the Ghost and extra reservoirs are located at Lake Minnewanka and the Upper Kananaskis Lake. In order to have a good power supply the rivers must run swiftly and it must be possible to dam them up quite easily. The Bow River is very suitable.



One of the recent improvements on the farm is the use of electrical power. A project is now under way to give rural districts electric power. This power project of rural electrification is making good progress. On many farms electricity now pumps the water, washes the clothes, operates the iron and toaster, lights the house and barns and separates the milk. Farm homes that have been fortunate enough to have electricity are just as modern as city homes. How different farm life is today to what it was in the time of the pioneers.

Pottery Making or Ceramics

One of the oldest industries in the history of the world is carried on at Medicine Hat. In almost every home in Canada may be found dishes, teapots and vases from the potteries of Medicine Hat. The method of manufacture has not varied very much since timeable times.

The clay comes from Southern Saskatchewan. It is crushed very finely and mixed with hot water to form a heavy liquid. Next it is screened to remove all impurities and is passed through a sort of "meat grinder" which removes the air pockets. The clay is then in a large roll ready for the potter's wheel.

Plaster of Paris moulds are made to hold the clay during shaping on the potter's wheel. The moulds revolve very rapidly while the potter skilfully and carefully shapes the article. Many moulds are used in the shaping and drying process.

The ware is then carried through the kilns for drying and baking. Small cars running on tracks do this job. It takes from thirty-two to sixty-four hours to make the trip of one hundred and ninety feet through the kilns.

The pottery comes out of the kiln to be glazed or finished. It is dipped in glaze of the desired color and again run through the kiln. The firing of the glaze coat is done at a very high temperature. Beautiful hard-surfaced pottery in a wide range of colors leaves the factory. The natural gas to supply the heat for the factory is found at Medicine Hat.

Bricks, Tiles and Glassware

Over forty years ago the great clay deposits at Medicine Hat were used for the making of bricks. A clay bank one hundred and fifty feet high and containing over thirteen million tons of clay is on the property of the Medicine Hat Brick and Tile Company. The Company has modern equipment and turns out bricks of all kinds, tiles for sewers, linings for chimneys, and other building materials. Natural gas again supplies the heat.

At nearby Redcliff is the centre of Alberta's glass industry. Bottles of all types are supplied to the people of Western Canada. Your mother gets her fruit jars from the factory at Redcliff.

The Canning Industry

The irrigated land of Alberta is the home of another important industry, -- grow-

ing and canning vegetables.

The Broder Canning Company began operating at Taber in 1934. Since that time the industry has expanded to Lethbridge, Brooks and Magrath. The sunny climate, the high altitude, and the good supply of water make the growing and canning of vegetables an important industry in Alberta. The canning companies have farms of their own, but most of the crops are grown by farmers of the district and are sold to the canneries. Over three hundred farmers grow vegetables for the canneries. Much of the work is done by Japanese who came from the Pacific Coast during the war. The next time your mother opens a can of peas, beans, corn, carrots or pumpkin look at the label to see if they were produced in Alberta.

Several other branches of the canning industry have become important during the last few years. A dehydration plant removes the water from vegetables and makes it easier to ship the goods to the starving people of Europe. Water can be added when needed. Another method of preserving vegetables is by freezing them. They are thawed out just before you are ready to use them. Quick-freeze products from Southern Alberta are on sale in our stores.

The growers of vegetables for the canneries now grow their own seed and also grow some for sale. Alberta grown seeds may be bought for your garden.

At Coaldale, just east of Lethbridge, the Mennonites have a cannery. Here vegetables, chickens and meat are canned. Since the war tons of meat have been donated by the people of the community. The canning has been done free of charge and the canned goods shipped to the people of Europe.

The Milling Industry

The milling industry is one you would expect to find in Alberta, because great quantities of grains are grown here. We have plenty of power and a good railway system to carry away our manufactured goods. Medicine Hat, Calgary, Edmonton, Lethbridge are all important for flour milling. Dozens of the smaller centres have their own flour mills. Lethbridge alone ships flour to thirteen different countries.

The by-products of the milling industry are almost as important as the flour itself. The coarser by-products are used for stock food. Breakfast foods are made in dozens of factories in Alberta.

How Flour is Made in Robin Hood Mills

When the wheat first arrives at the mill it is weighed on scales so large that they are able to handle a carload at a time. The first task is to clean the wheat and remove the weed seeds, chaff, bits of straw and dust. This is done by sifting it over screens of different sizes. Many of the small weed seeds fall through the screens. The straw and chaff are blown away by streams of air. It is then stored in large circular storage tanks.

After the wheat leaves the storage elevator it passes through a machine to remove any oats that may be mixed with it. Next it is scoured with metal beaters which drive it against a rough steel casing. This removes the dirt from the "crease" in the wheat

berry. This dirt is blown away by a strong blast of air. To make the cleaning job complete the wheat is washed in great washing machines. The damp wheat is "tempered" by allowing it to lie in bins for awhile. This makes it easier to separate the bran from the flour.

The crushing machines are next in line. These are great steel rollers. The rollers at the beginning of the system are coarse. They become smoother as you go along. As the wheat goes from roller to roller it becomes crushed more and more. At the end of this process the crushed wheat is separated into several streams. This is done by passing it over screens of different sizes. Again it is cleaned and crushed a little more and sifted into more streams. The part the miller makes into flour is called "Wheat-lets". More sifting, grinding and cleaning takes place. The final product is the best type of flour - the kind your mother uses.

Besides the best type of flour there are poorer grades containing bits of the bran coating of the grain. Feed Flour or "Reddog", Wheat Middlings, Wheat Shorts, and Wheat Bran are used for hog and cattle feed.

Wheat germ is another by-product of the milling industry. It consists of the part from which the wheat plant grows. It is rich in vitamins and is used as a nerve food and body builder.

Alberta's Industries at a Glance

<u>Industry</u>	<u>Number of Plants</u>	<u>Number of People Employed</u>
Meat Packing	13	4,000
Leather goods	12	143
Clothing	34	1,000
Creameries & Cheese		
Factories	112	1,800
Flour & Feed Mills	119	1,300
Bakeries	180	1,250
Breakfast foods		
Stock & poultry foods	35	330
Vegetable products	46	1,600
Sawmills (including 300		
portables)	700	7,500
Coal	200 mines	9,000
Petroleum	606 producing wells	3,000
Refineries	14	700
Fur goods	20	100

Transportation

The earliest methods of transportation in Alberta were by canoe, on horseback or on foot. Then came the Red River carts which creaked across the prairies from Fort Barry. The days of the stagecoach followed.

The rivers of Southern Alberta are swift, too swift for river transportation. The



A VIEW OF CALGARY SHOWING SEVERAL INDUSTRIAL ESTABLISHMENTS

--Photo by H. Pollard

rivers of the North, however, flow more slowly. Between Lake Winnipeg and Edmonton large flat-bottomed boats were playing their way by the year 1872.

The railway came to Alberta in 1883. It came through Medicine Hat, up to the tiny village of Calgary and through the mountains by way of the Kicking Horse Pass. We now have railway lines linking all the chief centres of the province. The main line of the C.P.R. is the original line through the Kicking Horse Pass. The C.N.R. has a line through the Yellowhead Pass at Jasper. The C.P.R. has its second line through the Crowsnest Pass.

A branch line extends to the Peace River Country where large freight trains take load after load of grain towards the markets of the world. Another line extends from Edmonton to Waterways where you meet the boat that takes you on your way to the Land of the Midnight Sun. The "Athabaska River" is a large flat boat driven by a great paddle wheel at its rear. It pushes barges before it. Stops are made for fuel at woodpiles on the banks. Thus we sail down the Athabaska River, across Lake Athabaska and on to the Slave River. At Fitzgerald the rapids force us to portage by road to Fort Smith in the North West Territories. Our trip continues by boat to the Arctic.

The automobile and truck have played a very important part in transportation in Alberta. Trucks haul the farmers grain to town, they take his stock to market, they take his milk and cream to the dairy, and make life much more pleasant and easy for those who live long distances from town. The oil truck with its great loads of fuel oil is a common sight on our highways.

The latest form of transportation is by air. Bush pilots were the real pioneers of northern flying. These daring men flew north from Edmonton carrying supplies to lonely trappers and traders. These were the men who risked their lives that they might "fly out" the sick. The many lakes of the north served as landing fields for their pontoon-equipped planes in summer, and their ski-equipped planes in winter. Cooking Lake, east of Edmonton was the starting point for planes going to the north.

It was in the 1920's and 1930's that bush pilots began to fly to the north. In 1934 a diphtheria epidemic struck the settlement of Fort Vermilion. Captain "Wop" May set out from Edmonton with serum to fight the disease. It was so cold that charcoal burners were used to keep the serum from freezing. These same burners almost caught the plane on fire.

Matt Berry, another bush pilot, made a trip into the Arctic to rescue two lost Russian fliers. For the successful rescue he received the McKee Trophy Award.





T.C.A. NORTH STAR AT EDMONTON AIRPORT

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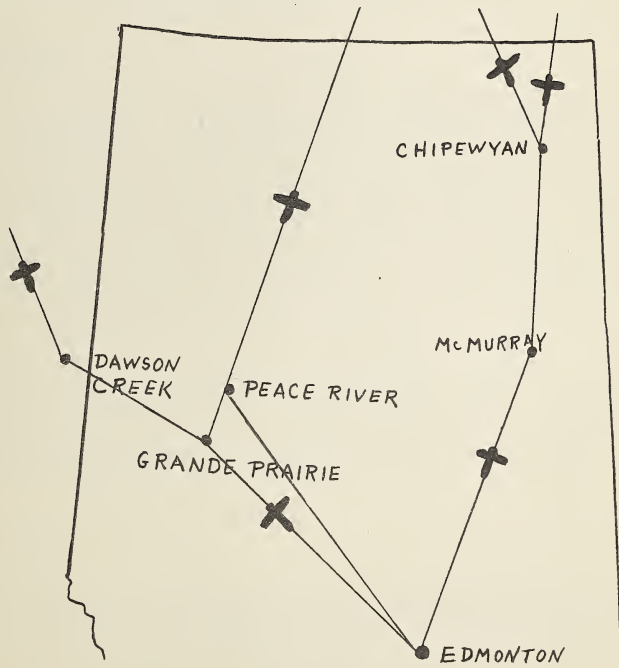
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Grant McConachie landed on a small pasture near Fort Vermilion and brought out two badly burned trappers. A tree ripped the belly of the plane from end to end, but he made the trip back to Edmonton with the trappers.

The mining areas of the North West Territories are becoming more important every day. Regular trips are made from Edmonton to the mining towns of the north. Supplies are flown in and many of the precious minerals are flown out. Gold from Yellowknife is flown through Edmonton. A factory for refining tantalum, one of the earth's rarest minerals, has been set up in Edmonton. The ore of this precious metal is flown to Edmonton from the Ross Lake Mines near Yellowknife.

Edmonton's "Backyard" is probably the biggest in the world. Out of the back door of the city - Edmonton's airport - go all the supplies for trappers, prospectors, Mounted Police posts, Eskimos and missionaries of the far North. Sometimes business men and government officials who have work as far away as Japan, travel first to Edmonton, and then catch one of the daily planes flying from Edmonton to Alaska, and on to Tokyo. The CAF's North-West Air Command at Edmonton has many planes operating out of the airport to serve stations along the North West Staging routes, the string of air force centres dotted along the Alaska highway. Canadian Pacific Airline operates regular plane service between Edmonton, Northern Alberta points like Grande Prairie, and the lonely outposts in the North West Territories and the Yukon.



NORTHERN AIR LINES

Sometimes one of the men who work in the north may get ill and need a doctor as quickly as possible. When this happens, the North West Territories and Yukon Radio System is used to call the "flying doctor". Usually the "flying doctor" - right now he is Dr. Callaghan - stays at Aklavik where there is a small modern hospital. A radio call will send him out in a plane to reach the bedside of the trapper or prospector or mounted policeman who is ill. Other times, when there is no plane ready for the flying doctor, the sick person may use the radio to broadcast a description of his illness to Dr. Callaghan. Dr. Callaghan, listening at Aklavik, will then tell him how to care for himself until help arrives. Patients who need hospitalization are flown to Edmonton. Almost any time you may find an Eskimo, a trapper or a prospector in Edmonton hospitals.

CHAPTER VIII: PARKS AND RESORTS

Nature's Wonderland

A very few years ago, if we had been one of the little animals or birds that live in our own Rocky Mountains, we might have seen two very happy people strolling along a pathway near the town of Banff. The trees, the birds, the animals that scamper over the ground in front of them, seem to interest them greatly. In our mountains we see people from all over the world, but this lady and gentleman are none other than the King and Queen of our Empire. It is not often that members of the Royal Family can slip away, unattended, to enjoy nature. This was an occasion that they will long remember. They were quietly walking in one of the most beautiful spots in the world - our own Banff National Park.

We are very fortunate to have, within easy driving distances of our homes, such unspoiled scenery. Our Government has set aside for our enjoyment, large areas of land which we call National Parks. They are for the use of all our citizens. Rich and poor alike are welcomed to spend restful vacations in our many parks and playgrounds. Shall we visit a few of the interesting spots in our mountains?

The Cave and Basin

It was in the year 1883 that a party of prospectors crossed the Bow River near Banff in a homemade raft. They noticed the smell of sulphur coming out a hole in the mountain and decided to investigate. They looked down the hole and beheld a wonderful sight. The opening in the rock was really the skylight to an interesting cave. They made a ladder out of poles and entered the cave. Inside they saw a beautiful green pool around whose edges hung glistening icicle-shaped formations. These formations were mineral deposits from the sulphur vapor which had been rising from the pool for thousands of years. They were known as "stalactites". Unfortunately most of these formations have disappeared now - they have been carried away by people who collect souvenirs, and who do not think of the way they are destroying nature's beauty.

No longer do we enter the cave by means of a ladder. A tunnel has now been dug through the side of the mountain and we are able to behold the sight the prospectors saw in the days, not so long ago, when our country was young. Water flows from the cave to a natural basin worn into the rock. It is here that an excellent swimming pool has been built. We are able to refresh our bodies in this health giving mineral water, just as the Indians did long ago.

Health Giving Water

The fame of the healing waters of this mountain district soon spread far and wide and in 1886 the Canadian Government decided to investigate the matter. Accordingly they sent an official to look the situation over, pay a fair sum of money to the people who had laid claim to the land, and take it over as a public reserve. The townsite was moved to its present location from the old buffalo paddock.

About this time Dr. Brett of the C.P.R. gained permission from the Government to

establish a sanatorium in which he would make use of the mineral waters to aid sufferers of certain diseases. In the midst of one of the greatest lumbering areas of Canada he was forced to send down to the Lake of the Woods in Ontario for lumber because there were no sawmills in the west at this time. His first buildings consisted of a small hotel and a small hospital.

Brett's first bathing pool was a pit dug in the ground. It was about four feet by six feet and was covered, none too well, with pine boughs. Later a log shack was erected and the holes in its walls were plugged with moss. The fame of the place spread and Dr. Brett extended his premises three miles up the mountainside near our present Upper Hot Springs.

If we visit the Upper Hot Springs today we will find a modern pool. The water comes out of the ground near by and while it is still hot it is piped into the swimming pool. In winter or summer you will find dozens of people enjoying a swim in the Upper Hot Springs. The waters contain minerals which loosen stiff joints and ease tired muscles. Next time you are in Banff try it! If you still do not feel quite healed of your aches and pains take a drink of the sulphur water. Your doctor says it is good for you - but oh, the taste and smell!

Mount Eisenhower (Castle Mountain)

Let us take a trip west from Banff about twenty miles. We see a great mountain whose shape reminds us of a huge castle with its towers and turrets stretching skyward over 9,000 feet. A few years ago this mountain was called Castle Mountain, but to honor the man who commanded the forces of the Allied Nations in the recent war the name was changed to Mount Eisenhower. It is truly a great and beautiful mountain. Part way up its slopes we may see herds of mountain sheep or goats grazing on the vegetation that grows on its surface. This reminds us that it is lunch time and we unpack our lunch kits and eat in the quaint picnic shelter provided by our Parks Department. We are truly in nature's wonderland.

In the very shadow of this great mountain a busy mining town once existed. Over three thousand people flocked to Silver City just after the railway passed through in the year 1883. As its name tells us, people came here in the hope of becoming rich in mining. Far more people lived in Silver City than lived in Calgary at the time. Then came the great disappointment. No more mineral wealth was to be found in Silver City. As quickly as they had come, the prospectors left for more profitable fields. Only one man lived on in Silver City. He was James Smith, and for well over fifty years he made his home in the ruins of this city that once flourished with activity. He is dead now, and all that we have to remind us of the place that was expected to become our chief city, is a few old basements, some rubble-filled wells and ruins of one or two old houses. The life of the miner is filled with disappointments!

The Banff Winter Carnival

Each February a winter carnival is held in the town of Banff. Here in the shadow of great snowy mountains - Rundle, Cascade, Norquay and Sulphur, people come to enjoy many types of winter sports. Along the snow covered streets of Banff wander persons in all types of sporting attire. Perhaps they are going to the skating competitions on the river, perhaps they're going for a dip in one of the pools, or perhaps they're going to-

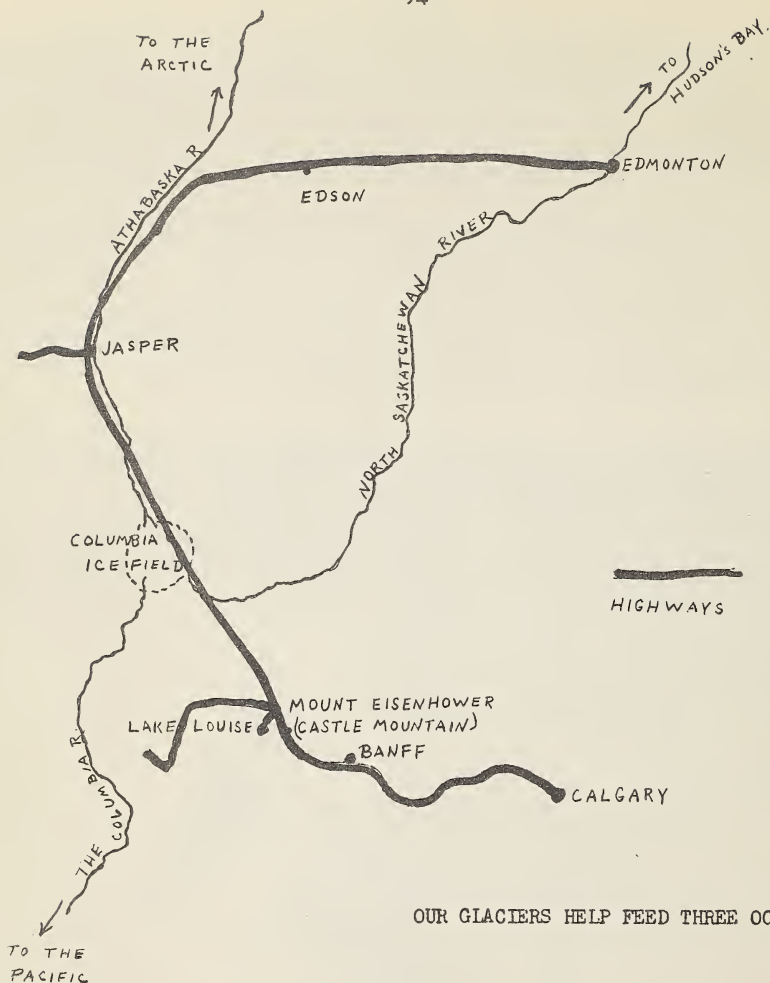
bogganing.

The streets of Banff are gaily decorated for the carnival. Along Banff Avenue are statues of animals and people all carved out of ice. A large ice palace is built for the crowning of the queen. Near the end of the carnival the lady who is judged to be the best sportswoman present, is chosen queen. She is attended by her ladies-in-waiting and, with great ceremony is crowned queen by some important visitor to the carnival.

One of the main attractions is skiing on Mount Norquay. Competitions are held far up the mountain side. Even the best of the contestants sometimes find themselves wrong side up in the deep snow - but that's only a part of the fun. To save the skiers the effort of climbing the slopes to their starting point, a long belt has been in use for several years. This was operated by engines and all the skier needed to do was buy a ticket and hold on. Chairs have recently become part of the equipment so now you travel up in style. The way you come down depends on your ability in the use of skis. The slopes are steep, so your trip will at least be speedy.



SKIER AT BANFF



OUR GLACIERS HELP FEED THREE OCEANS

Lake Louise

"It sleeps among the thousand hills
Where no man ever trod,
And only Nature's music fills
The Silences of God.

Great mountains tower above its shore,
Green rushes fringe its brim,
And o'er its breast forevermore
The wanton breezes skim."

-- Canon F. G. Scott

These must have been the thoughts of the first men to behold our "Gem in the Clouds" - Lake Louise. It is surrounded by mountains whose reflections in its clear waters are as beautiful as the mountains themselves. Across the Lake is Victoria Glacier! This is a huge mass of ice probably left over from the ice age. Year by year it slips a little farther down the mountain side. The part of the glacier that is in the water slowly melts and feeds the Lake. We need not worry about "running out of glacier", for year by year, more ice forms on the top of it.

On the shore of our Lake is built the beautiful Chateau Lake Louise. The grounds of the Chateau are a mass of mountain flowers and well kept lawns. Here you can wander along the pathways and each time you look at the Lake you see some new beauty. It never looks the same. If you are a venturesome soul you may put on your hiking boots and hike along its shore. Perhaps you prefer to hire a guide and pony and really travel high up in the clouds.

Johnston's Canyon,
Banff National Park,
August 1, 1948.

Dear Uncle Grizzly:-

It is a long time since I last wrote to you, but you know how slow I am at writing letters. A great many things have happened around here in the last few years. Remember how I used to go down to the highway and wait for "hand-outs" from good-natured tourists? Well, I am back at the old game again.

When the terrible war was on gasoline became very scarce, so fewer and fewer tourists travelled through the park. That meant that I got less and less food handed out to me. The winter of '43 was a hard one. I had not eaten as well as usual during the summer and did not have enough fat on my bones to last me all winter. When spring came I was a thin and hungry bear. I decided that I would have to work for my living.

I met Peter Porcupine one day and he told me that I should go into the woods and pick wild berries for my food. Now, you know how I hate to work, but if I wanted to eat, I must work. So into the woods I went. This was quite a change for me, but I really enjoyed it.

The people of the woods were very kind to me. It was not long until I had plenty of friends. I became very friendly with Charlie, the Mountain Chipmunk. He is just a little fellow with a long tail. He likes to eat oats that fall on the ground when the pack horses are being fed. Like me he had to hunt other food because there were not as many pack horses in the mountains as there had been other years.

Do you remember Mickie, The Mantled Ground Squirrel? He has a reddish mantle over his head and wide black stripes down his back. Mickie is a lazy fellow with a big appetite. Some people call him the Big Chipmunk. He likes to eat scraps from hotels and camps. When I last saw him he was telling me he was thinking of moving down to the prisoner-of-war camp at Kananaskis.

I had quite a surprise one day when I was walking along a mountain trail. I saw a queer little fellow with ears like those of a rabbit and no tail. I asked him who he was and he said "Percy the Pika". He was busy cutting hay and storing it under rocks to

cure. In the winter he would eat it.

The mountain goats and sheep used to come down to see me quite often. They said that they were not having much trouble getting food away up on the timber line. I could hardly believe my eyes when I saw them walk almost straight up a mountain side. They said they saw you quite often.

Last spring I met Danny Deer who had just returned from Banff. He asked me why I didn't go back to Johnston's Canyon again now that the war was over and there were more tourists. I didn't know that the war was over and got a surprise when he told me it had been over for nearly three years. Here I had been working hard all that time when I could have been enjoying the gifts of passing motorists. You can imagine how quickly I hurried back to my old haunts.

I was over to the Pond to see my Beaver friends a few days ago. They were busy chopping down trees and building a dam, but we did have a nice visit. Grandfather Moose, who was cooling his feet in a small lake, called to me as I passed by. Oh yes, Dan McCowan, the great Canadian Naturalist, took my picture last week. I was glad to see him. He was a friend of my great Grandfather nearly 40 years ago.

I think I will take a holiday one of these days. Perhaps I'll go to the dump at Banff. They tell me that many people come there each day to see the bears. The last time I was in Banff I ate so much candy that I got tooth ache. Another trip I would like to take is one up the Jasper Highway. A bear must be careful these days because some motorists travel too fast in the mountains. The Highway Patrol does try to protect us from careless drivers, but one has to be careful.

How is your old friend the Grey Marmot? Does he still make a noise like a train whistle when a human being comes near him?

I hope you will be able to come down and see me one of these days. I am saving a watermelon in case I get unexpected guests. It rolled out from under a tourist's tent the other night. Of course you would prefer a good juicy steak.

Best wishes to my friends at Jasper.

Love,

Buster Bear.



UNCLE GRIZZLY

The Columbia Ice Field

One of the most interesting spots on the Banff-Jasper Highway is the Columbia Ice Field.

For countless ages snow has been falling on our mountain peaks and where it does not melt in the summer it gradually changes to ice. The great weight of the ice causes it to spread out around the edges. Such a spot is the Columbia Ice Field. Here a huge mass of ice at least a quarter of a mile thick covers an area of over one hundred square miles.

Its edges melt to become the sources of three great rivers - the Columbia, which flows into the Pacific Ocean, the Saskatchewan which finally reaches Hudson's Bay and the Athabaska which ends up in the Arctic. The highway passes the Athabaska Glacier and if you wish, you may stop your car and stand on this huge mass of ice. Here you are truly on the roof of North America.

Jasper

One of the earliest trading posts in Alberta was set up by a man whose first name was Jasper. We are not sure of the spelling of his last name - it may have been Hows, Howse, Howes, or House. We shall call him "Jasper House". The Indians called him "Yellowhead" because this big Scandinavian had very blonde hair.

Jasper came to the mountains of Alberta to buy furs from the Indians who came to his post through the mountain passes. For several years the Indians travelled to Jasper House trading their furs for tobacco and other goods of the white man.

One day Jasper, his Indian wife, and their large family disappeared. Probably they upset their raft or canoe in one of our swift mountain streams.

A northwest trading post remained in the area. It was, no doubt, that built by Jasper House himself. Perhaps this is only a legend, but the pretty little town of Jasper is one of the beauty spots of our Canadian Rockies.

Surrounding the town and adjoining Banff National Park is Jasper National Park, the largest National Park in North America. Along the Banff-Jasper Highway once came the pack horses of the fur traders - many of the mountain streams were too swift for canoes.

Jasper remains much the same as it was in the days of Jasper House himself. Some of the trails have become highways, in place of the Indian teepees we find neat little tourist cabins, but nature's unspoiled beauty remains in this part of the world. All kinds of mountain animals live here, protected by a law which says "No shooting in our National Parks".

Words cannot describe the beauty of our mountains. You must see them for yourself. Whether you come by road, or by rail through the Yellowhead Pass, you will be thrilled with the sight of the great towering mountains, and the rushing mountain streams of Jasper National Park. Cutting through the Park is the broad valley of the Athabaska River. Sunwapta, Whirlpool, Maligne, Miette, Snaring, Rocky and Snake Indian Rivers are all branches of the Athabaska.



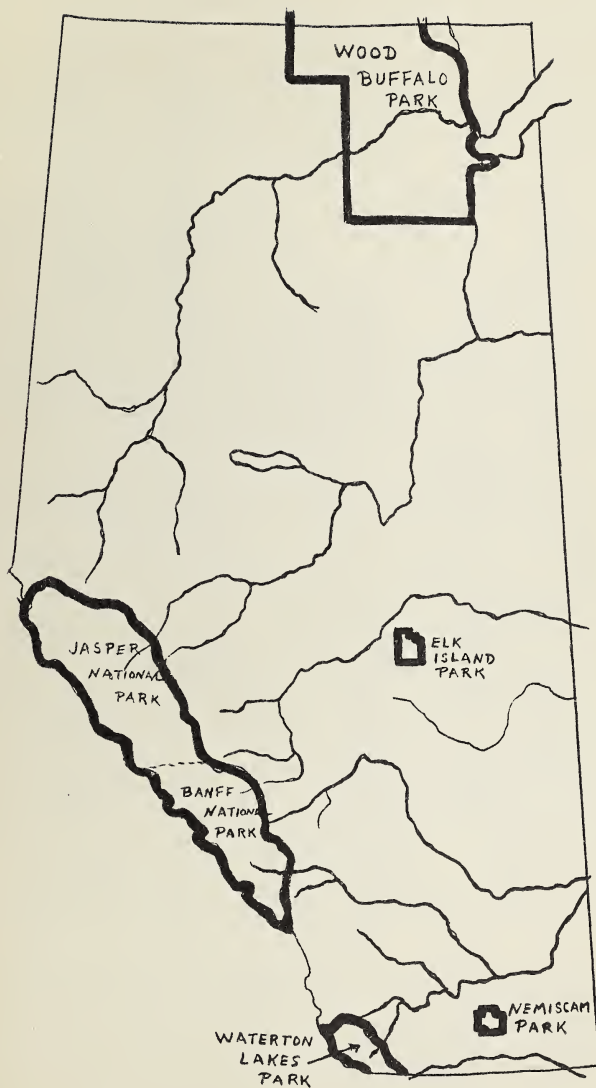
--Courtesy of Alberta Publicity & Travel Bureau

MALIGNE LAKE - JASPER NATIONAL PARK

Waterton Lakes National Park

In the southwest corner of our province lies the most colorful of our National Parks. In place of great towering mountains with snow capped peaks it has rolling foothills and old rounded summits rising directly from the prairie. It has a warm and colorful appearance - just the place for a restful holiday.

The rocks in the park are beautifully colored. Bands and splashes of gold, green,



PARKS AND GAME PRESERVES OF ALBERTA

wine, purple and red add a beauty which one must see to appreciate. Then there are the shale outcroppings farther up the mountains which glisten in the sunshine like pure gold.

The country around Waterton was at one time called the Kootenay Lakes District and it was the home of both Indians and buffalo. Many were the buffalo hunts and Indian battles fought in the pleasant park. Blackiston Brook, or as the old timers called it, Pass Creek formed the gateway to four routes over the Great Divide. Over these routes in their turn passed Indians, trappers, and traders.

Then came the days of the ranchers and cattle rustlers. The secluded valleys of Waterton made excellent hiding places for the stolen herds of the cattle rustlers. At one time oil men came to Waterton to drill for oil which was seeping from the many cracks in the rocks. They soon left, however, for more profitable fields.

The real name for this park is Waterton-Glacier International Peace Park. Directly to the south and joining our park the United States has its Glacier Park. The two countries have made one park out of these two as a means of showing their friendship. You may travel by motor launch over beautiful blue green water from the Canadiana to the American side. The only boundary you will see is a narrow path cut in the woods along the shore of the lake and leading up the mountain side.

Hiking, riding, fishing, motoring, swimming, boating, golfing, tennis, mountain climbing or just plain sleeping are some of the many attractions offered the tourist in the country around the three lakes at Waterton.

Game Preserves and Bird Sanctuaries

It is a law in Canada that wild life must be protected. To be sure that there are places where animals and birds are protected our Government has set aside certain areas where shooting is not allowed. Besides our large national parks, there are a number of other preserves in which our wild friends may live in peace and safety.

East of Edmonton we have Elk Island National Park which contains a herd of about one thousand bison or plains buffalo. The preserve is fenced and contains herds of elk, moose and deer. This is also a very beautiful and interesting resort. In the north-east section of Alberta, extending into the North West Territories, is the Wood Buffalo Park. It is the new home of the buffalo that had inhabited the old Buffalo Park at Wainwright until 1940. It is too far from our centres of population to be an attraction for tourists. In the southern part of the province is Nemiscam National Park. This is a small park and is reserved for prong-horned antelope.

Our birds are not forgotten. In the national parks they receive the same protection as our animals. Several Bird Sanctuaries have been established in the province for the birds to nest and live unharmed. In bird sanctuaries which provide food for the birds in winter it is interesting to note that many birds which ordinarily go south in winter remain here in the cold weather. This proves that it is lack of food and not the cold that sends our feathered friends to the warm south.



HELLO!

---Alberta Government Photograph

CHAPTER IX: THE HEALTH SERVICES OF THE PROVINCE

"Health" Is Like A Bicycle

Health is something we can own and look after. If mother asks us to run to the store for a head of lettuce, our bicycle will save us much time. Our healthy body, too, can save us much time if we have that same errand to do, for, if we have a weak heart we must go very slowly - like a child without a bicycle. A bicycle is not much use with a flat tire. It must be kept in good repair to be useful. Our bodies, too, must be kept in good working order. To fix a bicycle you need a wrench, and a patching outfit and time. These tools keep the bicycle working. We have tools to keep our bodies working properly, too. It is these tools that we would like you to know about and also learn how to use.

You know our fathers and grandfathers made tools for themselves and for us. If the old one did not work they made a new one. Some of our people do not know that we have new tools for sale. They are still using the old ones. So we must not only know about the new tools, but we must tell others about them.

Let us now look at our tools. Some tools are for little bodies - for our baby brothers and sisters.

We Have Clinics for Our Babies

Our parents must know what foods the baby can eat and when he can eat them. You know that you cannot give a tiny baby a steak, for he has no teeth. For their bodies to grow teeth, they must be given milk and cod-liver oil. Therefore our Provincial Government at Edmonton, together with the local governments of your town or district, provides teachers for those who look after babies. These teachers are nurses and doctors. They are specially trained to tell us how babies should be fed, why they are sick, and what to do to get them better. You may now ask, "Where are these teachers to be found?"

In Edmonton, the "Baby Clinic", or place where we can find out about our baby's needs, is on 102nd Avenue near the Civic Block. In Calgary, it is on the third floor of the City Hall. These clinics are open every afternoon until four-thirty except on Saturdays and Sundays.

"Where are they in the country?" - If you live in a small town and that town is in a district under a "Health Unit" (I will tell you about this organization later), the nurses and the doctor set aside special times for the mothers to come and have their babies checked, weighed, and measured. You will have to write the "Health Unit Office" in your community, or ask the nurse when she comes to school, when and how often and where the "Baby Clinic" will be held. These clinics are held regularly about once a month. You should be able to tell John's mother that the next clinic is "Wednesday afternoon, October the tenth, in the Community Hall", so that Susan, his year old sister, can be well looked after. You see, John has just moved here and his mother does not know where your "clinic" is held.

Do you live on a farm in the north country, or are you living in a tiny mining village in the mountains? In either place, you have a district nurse. She will hold sp--

pecial clinic days, or you can call at her office regularly and she will help you to see that baby grows up strong and well.

I have just told you of one tool used especially for babies. We have a whole kit full of tools. I think we should take them out and see how we can use them.

The Provincial Department of Health

This is really our tool box and in it we keep many tools. We have tools which look after our bodies so that they may grow strong and healthy, tools which will prevent sickness, and tools which will cure us. We still have not found a cure for some conditions, but the health tools help us with these diseases.

Hospitals Help Us to Get Well

These are tools for curing and helping. You all know what a hospital is. Do you know how you got the hospital in your district?

If your hospital is a municipal hospital, one quarter of the people paying taxes, or the governing body of the district, or municipality, asked the Minister of Health to start a "hospital district". The taxpayers then set up a hospital governing body from their members on the municipal councils. These people planned how the "hospital" was to be built, and the cost of it. The Provincial Government will pay half the cost up to seven thousand dollars. The cost of supporting the "hospital" is raised by the taxpayers paying a dollar a day when in hospital, and by a yearly tax on all houses and land situated in this new hospital district. The hospital governing body is elected each year to look after the business of the hospital.

Of course your hospital could be privately owned by the doctors or by a religious organization. If this is the case, your municipality may have an agreement for a special rate for its taxpayers.

All this special help for municipalities to set up small hospitals throughout our province, was brought about by a special act of the Legislative Assembly, and is called the "Municipal Hospitals Act".

There is one special group of people who are given free hospital care. These are the mothers who are expecting a new baby. We want each new baby to be given the best possible care right from the start, so an act was passed in this province, called the "Maternity Hospitals Act", in 1944 and this allowed for free hospital care if the mother had been living in the province for over one year.

There are Hospitals for Special Illnesses

There are other hospitals in our province which our Government supports. These are special tools for special work. For example, we have hospitals for those mentally ill. These hospitals treat many patients who recover completely and return to normal living. Of course, some do not recover and must stay in our hospitals as chronic patients. These hospitals are:

- (1) The Provincial Mental Hospital at Ponoka

- (2) The Provincial Mental Institute at Oliver, near Edmonton.
- (3) The Claresholm Auxiliary Mental Hospital.
- (4) The Auxiliary Mental Hospital at Raymond.
- (5) The Provincial Training School for Mental Defectives at Red Deer.

Tuberculosis Needs Special Care Too

We have a hospital especially for tuberculosis patients. This is the Central Alberta Sanatorium at Keith, near Calgary. The Dominion Government also provides a tuberculosis hospital in Edmonton for our Indian people with tuberculosis. This is called the Charles Cammell Memorial Hospital.

You see, our hospitals look after us when we are sick. They have new equipment which you or I could not have in our homes, for it costs hundreds of dollars. This equipment is used for treatment. Therefore when the doctor says that mother should go to the hospital, dad and you know that she will be back home and up and about so much faster than if you looked after her at home, and tried to do without these special tools.

Our Hospitals Are Inspected

These hospitals which we use, must be kept in working order, so there is a special tool for that job. The Provincial Government inspects hospitals and sees that their standards are kept up. This is the oilcan that keeps things running smoothly.

Alberta Has A Laboratory

The province has a highly equipped laboratory which examines specimens which the doctors send in to it. This helps in diagnosis. It not only serves the doctors, it serves local boards of health, hospitals and individuals. It provides us with vaccines, anti-toxins and toxoids free of charge. Our Provincial Laboratory is located in the Medical Building of the University of Alberta in Edmonton. The cost of this laboratory is, each year, about \$200,000.00. but with the planned opening of a branch in Calgary, it will soon cost much more.

What Can We Do For Mental Health?

The mental health of our people is as important as our physical health. I have just mentioned the mental hospitals. Besides these institutions we have two permanent guidance and mental hygiene clinics for children - one is in Calgary and one is in Edmonton. Their job is to help prevent mental ill health and to aid our young people to be good citizens.

We also have similar clinics for adults held regularly in Edmonton and Calgary and at set intervals in the larger towns and cities throughout the province.

Our Cancer Service is a New Tool

Some special attention must be paid to illnesses which are most common among our



--Photo by Rosettis, Calgary, Alberta.

people. Cancer is one of these. It is the unusual growth of a body cell. It is found more often in older people. The successful treatment of cancer depends upon the doctor knowing about it when it first starts. Therefore our province has two clinics for diagnosis. These clinics are free for anyone who is referred to them by their family doctor. Since much of the treatment is surgical, dressings are supplied free. Hospitalization for the purpose of diagnosis is also free. After the illness is known to be cancer, the patient must pay his own hospitalization for treatment. The cancer clinics are staffed with surgeons, physicians, radiologists (X-ray treatment specialists) and pathologists (research doctors).

What We Do For Tuberculosis

Another one of these illnesses is tuberculosis. It is a communicable disease (one which can be passed from one person to another) and when in the communicable stage, the patient must be put in hospital or isolated. It is possible to have tuberculosis of the lungs, which is the most infectious kind, without knowing it. To prevent spreading this disease, the Alberta Tuberculosis Association bought two mobile X-ray units from their Christmas Seal Fund and gave them to the Department of Public Health. As you know, an X-ray of the lungs will show whether you have tuberculosis or not. These two units have already X-rayed, free, one half of the people of Alberta and found two persons in each thousand, who are spreading tuberculosis and twelve others in each thousand who need a doctor's care. To finish this work, every one in your community needs to have this free X-ray, so that the other half of the people can be checked and helped to get well and stopped from spreading this disease.

Beside the mobile X-ray units, there are special tuberculosis clinics at the Central Alberta Sanatorium at Keith, in Calgary at the City Hall, in Edmonton at the Edmonton General Hospital, and in Lethbridge. These are open and free of charge to anyone who wishes to be examined for tuberculosis.

There is a new tuberculosis hospital being built in Edmonton to take over the patients from the north of our province.

Our patients, who have had tuberculosis, must now be careful and not overwork. They are helped by the government to learn new jobs that they are able to do, which will not tire them too much. A tuberculosis patient must rest a great deal to get and keep well.

Tuberculosis of the bone and tuberculosis of the kidney have been added, in 1949, to the types of tuberculosis given free treatment by the province.

How We Control Communicable Diseases

These are diseases which can be passed from one person to another. Tuberculosis, we said, was communicable. What other diseases do we have which are communicable and how do we control them?

Again we have special tools to look after this problem. We have immunization which includes inoculations and vaccinations. Our Provincial Laboratory supplies each district health service with the toxoids, anti-toxins and vaccines, free of charge. So, such diseases as smallpox and diphtheria can be stamped out. I say "CAN", but if all the

QUARANTINED

DIPHTHERIA

Anyone entering or leaving these premises without permission from the Medical Officer of Health, or anyone removing, destroying or defacing this card, is liable to a penalty of \$50.00 and costs.



MEDICAL OFFICER OF HEALTH

QUARANTINED

SCARLET FEVER

Anyone entering or leaving these premises without permission from the Medical Officer of Health, or anyone removing, destroying or defacing this card, is liable to a penalty of \$50.00 and costs.



MEDICAL OFFICER OF HEALTH.

WARNING CARD

INFECTIOUS DISEASE WITHIN

KEEP OUT!

MILKMEN Deliver milk into covered containers outside the house.

Do not handle bottles or other vessels from the house.

Bottles or other vessels not to be removed.

Do not take tickets or checks.

BAKERS Do not allow exposed bread to be handled by inmates.

Do not take any tickets or checks. Bread once delivered must not be returned.

GROCERS Deliver goods at this entrance. Articles once delivered must not be returned.

LAUNDRY-MEN and OTHERS Are prohibited from removing laundry until expiration of quarantine. Nothing to be removed without permission of Medical Health Officer.

 Fish Printing Co., Calgary

BY ORDER
BOARD OF HEALTH
CITY OF CALGARY

MODIFIED QUARANTINE

WHOOPING COUGH

ANYONE DEFACING, DESTROYING OR REMOVING THIS CARD, IS LIABLE TO A PENALTY OF \$50 AND COSTS



MEDICAL OFFICER OF HEALTH

boys and girls are not immunized, we will get outbreaks of these diseases and children will die. In January and February 1949, we had twenty-nine preventable cases of diphtheria resulting in five deaths. You look up and down the street before you cross, so be sure that you use this service as a safety measure too.

Besides these serious diseases, we have less serious ones such as scarlet fever. To prevent this disease from spreading, we have placarding of the house and a strict quarantine. That is, no one comes or goes to the house while a person in the house has the disease.

There are others like whooping cough, for which the patient is isolated and the houses placarded, but those who have had the disease can come and go. Those in the home, who have not had it, must stay in quarantine until the germs they may have caught, have had time to give them the disease. This is called the "incubation period". After this time is over, they may come and go if they did not contract the disease and the patient, who has it, is isolated - kept in a separate room until he or she is well.

Then too, we have such a disease as measles (red measles) which is similar to the above. There is no placard for this disease.

Lastly, there are such diseases as German measles, chicken pox and mumps, which are not so serious. The patient, only, is kept separate and anyone can come and go to the house.

These are rules laid down to protect you, and you, by following them, protect others.

Do you know that to help protect ourselves from these diseases our provincial and municipal governments need to know how many cases (patients having the disease) they have each year. It is your job and your doctor's to tell them. Phone the Health Department or write a letter to the district nurse.

Our Province Looks After Poliomyelitis Patients

Poliomyelitis or infantile paralysis, is specially looked after after the infectious (or catching) period is over. Patients get free hospital and doctor's care if there is paralysis left. They get treatment, if they are out of hospital. At clinics they are helped to obtain such things as special boots and splints. If they are older, they are given help to learn jobs that they can do to earn their living. This help was made possible by the "Poliomyelitis Sufferers Act" which was passed in 1938.

I have been telling you about special health services available to you - tools you can use to be and keep healthy - tools for curing and tools for the prevention of illness. We still have not seen all the tools for prevention. Shall we look at some of these now?

How the City Health Departments Are Made Up

In the cities, you have a health department. It consists of:

- (1) Medical Officer of Health - one or two doctors to help.
- (2) Nursing Staff - Specially trained nurses to help in the use of the services.

- (3) Sanitary Inspectors - Men who inspect dairies, water supplies, eating places. They investigate complaints and inspect private and public grounds and buildings to see that conditions are right for healthy living.
- (4) Well Baby Clinics - Nurses and doctors are in charge of these.
- (5) Dental Clinics - These give inspections and treatment.
- (6) Local Laboratory - used for minor tests.

Those who live in the city know we can contact any of these services through telephoning the Health Department.

Our Rural Health Districts

In the country districts we have the "Rural Health Districts" or what is more usually called "Health Units" to look after large areas of the province.

The staff of such a unit has:

- (a) The Medical Officer of Health in charge - he is a doctor.
- (b) Two Public Health Nurses.
- (c) A Sanitary Inspector.
- (d) A Stenographer or Office Assistant.

These smaller tool kits which we keep ready for use in our larger tool chest, give us the following services:

1. Communicable Disease Programme

- (a) This consists, you remember, of the quarantine of cases of diseases which can be passed to others. Tuberculosis is a disease included here.
- (b) Inoculations and vaccinations.
- (c) A special effort is made to find the start or cause of a disease of which there are a great many cases, e.g. a typhoid carrier working in a dairy. They are not sick, but, because they have the germ and pass it on, others become sick.

2. Special education and care of a mother both before and after her baby is born.

3. Special clinics for babies and children up to school age.

4. School Service - This is your special tool. You can use it to have:

- (a) Clean healthy school buildings and playgrounds.
- (b) Control of any epidemics of disease among the pupils.

- (c) Immunization - inoculations and vaccinations.
 - (d) Health examinations by the doctors.
 - (e) Dental Service - care and repair of your teeth.
 - (f) Your nurse is there also to help if you need information or care especially for your own bicycle - YOUR HEALTH.
5. Some districts have a visiting Mental Hygiene Clinic.
6. Nutrition - the food and body needs, such as iron and calcium and vitamins, are given to you by vitamin pills and milk. The doctor and nurses make studies of these special needs in your district.
7. Health teaching - This is done, not only to school children, but to your teachers, your dad and mother, your clubs, and the people who govern your town and municipality.
8. Sanitary Inspection - The Sanitary Inspector does a great deal of teaching when he demands:
- (a) Clean healthy water for you to drink.
 - (b) Garbage properly looked after and carried away.
 - (c) Clean milk.
 - (d) Fresh meat.
 - (e) Clean and fresh foods of all kinds.
 - (f) He uses your laboratory to test samples.

The District Nurse

Now lastly, in our outlying districts, we have a "DISTRICT NURSE". The people depend upon her a great deal for their health. The nearest doctor is often twenty-five to eighty miles away. The District Nurse lives alone in a small cottage. In her office, in the cottage, is her tool chest where she keeps medicines and bandages and special tools or equipment she might need, supplied to her by the Provincial Department of Health. The people in her "district" provide the house and they also come and get her and take her home again, when she is needed for an accident or in somebody's home where there is a sick person. She tries, as best she can, to do the work of a health unit, and also of a doctor, so that the people in her outlying district will have their health protected too.

You have just been examining the tools in your chest. Of course every good workman buys himself an extra tool or two, which does not come in his set.

One of the Extra Tools is the "Canadian Red Cross Society"

It gives us special services:

(a) The Blood Transfusion Service

This service gives free blood to anyone who needs it. They get the blood to give ill people, from healthy men and women from the ages of eighteen to sixty-five years. These people give their blood so that others may get well. They in turn may need to use this tool themselves if they become ill.

(b) Disaster Relief

If a disaster, like a flood or a fire, sweeps through your community, the Red Cross Society provides first-aid to the victims - clothing, medical supplies, doctors, nurses, and food until they can help themselves again.



BLOOD BANK

The Junior Red Cross is your organization. It stands for good health, citizenship and international friendship. It teaches good citizenship by showing us how to organize and be good leaders. You see, you who are well must be able to help those who need help and need it now. Your fund raising plans help a great deal to do this. Perhaps I could tell you what some of your Junior Red Cross groups have done.

In 1948 the grade five students of an Edmonton school decided to have a rummage sale. They took a letter with them to the homes in the school neighborhood explaining what they were going to do. The people helped them by giving clothing, books, games, canned goods and candy. Their sale lasted two days. They raised eighty-five dollars which they sent into headquarters to be divided between the Junior Red Cross Hospital and the Overseas Fund. What was left over from the sale was put into three cartons. One carton went to help needy people in Edmonton and the other two boxes went to help the people in British Columbia who were flood victims. You see the "Juniors" too, can help in the disaster relief given by the Red Cross.



PATIENT IN JUNIOR RED CROSS HOSPITAL

Another group of children in a small country school in the south of Alberta had no regular health examinations. With the money they raised they were able to pay a doctor to come in and give them all a medical examination. They also paid for the glasses for one of their class mates.

I wonder now, have you a Junior Red Cross group in your classroom? If not, perhaps you too could start one to help yourselves and others to keep healthy and well. You know the headquarters staff in Calgary has a nurse in charge with two helpers who visit the schools throughout the province. They will help you at any time to organize or give you any information you wish.

The old Junior Red Cross Hospital is no longer able to meet the needs of our boys and girls. A new hospital is being built in Calgary which will have a great deal more room and better equipment than the old one has. Juniors, let us get organized! Every Junior Red Cross group in Alberta can help in some way.

Tools are Made to be Used

Your tool box is full of tools, but tools are of no value unless they are taken out and used. We must use our tools wisely if we are to have healthy boys and girls and healthy men and women in our province.

Health is the greatest possession a person can have. Let us treasure our good health and protect it.

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